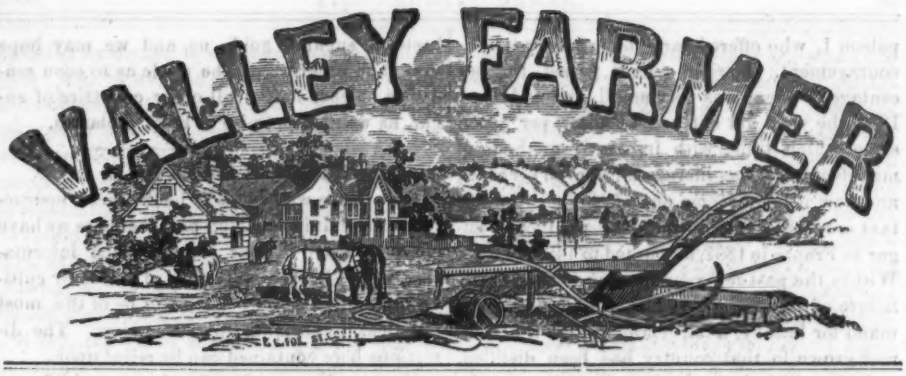

NORMAN J. COLMAN, Editor and Proprietor. BENJ. BRYAN, Publisher.

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BEET ROOT SUGAR.

Twenty-five years ago efforts were made to introduce the growth and manufacture of beet root sugar into the United States. In Philadelphia a society was organized for the purpose of making experiments in the manufacture of sugar from beet root. The society employed Mr. Jas. Pedder as an agent to visit France for the purpose of acquiring information on the subject. Mr. Pedder spent several months in the sugar producing districts of that country, where he entered a factory and took an active part in the manual operations of the establishment. On his return to the United States, experiments were conducted at great cost in various parts of the country to produce sugar from the beet, but no very satisfactory results were arrived at.

The general conclusion seemed to prevail that owing to some defect in our climate the beet did not yield sufficient saccharine matter to render the production of sugar from it practicable.

During the past season, Mr. Belcher, a well known sugar refiner in the West, and who has been very successful in refining the syrup from the sorghum plant, determined to subject the beet root to a still farther test, in the hope of success in the production of sugar. With this view, he procured from Europe a supply of seeds of various kinds of the sugar beet, and, by the agency of the Illinois Central Railroad Company, distributed them among the farmers on the line of that road, and through a range of two hundred miles, with a view to ascertain the kind of soil and climate best adapted to the growth of the root.

The result gives promise of the most satisfactory character.

An analysis of several samples of the root, raised in the prairie soils of different localities, shows a yield from nine to thirteen and a half per cent. of saccharine matter, and samples of sugar were produced with inferior apparatus, that have been pronounced by good judges to be of excellent quality; and it leaves no doubt in the minds of those engaged in the business, that with appropriate machinery and fixtures, and by a more elaborate and scientific process, the American beet root will yield as large a per centage of sugar, and of as fine a quality, as that so largely produced now in Europe.

Both France and Germany are now extensively engaged in growing the beet and in the manufacture of sugar. So important has the business become, that the annual rent of the land is equal to four times the price now asked for better land in this country.

The manufacture of sugar from the beet was introduced into France during the reign of Na-

poleon I, who offered large bounties for its encouragement. During a long period, the per centage of sugar was very small, and as late as 1830, the yield did not exceed three per cent., since which time, with improved methods of manufactare, it has increased to eleven per cent., and now it has become one of the most important crops in the empire. The product of sugar in France in 1861, amounted to 148,000 tons. Within the past few years, owing to the partial failure of the grape crop, and the increasing demand for brandy, a large amount of the beet-root grown in that country has been distilled, and the product flavored and sold to us for brandy. It is estimated that the aggregate value of the beet root sugar manufactured in Europe is equal to $40,000,000 annually.

Since the introduction of Sorghum and Imphee into this country, but a few years ago, immense improvements have been made in the manufacture of syrup and sugar, and it is hardly probable that perfection is yet nearly reached. It is this rapid improvement in the manufacture of these articles in this country that leads us to hope corresponding improvements may be made in the manufacture of sugar from the beet. While the root is cultivated in France exclusively by manual labor, it will be chiefly done in this country by the most improved machinery, greatly reducing the cost of production.

The subject is now attracting the attention of the Agricultural Societies of Iowa and Illinois. The efforts of these Societies are to be vigorously aided by the Illinois Central Railroad Company, which has offered to transport, free of charge to the manufacturers, all the beets grown from the seed distributed by Mr. Belcher. Recent experiments demonstrate that, with the knowledge that will now be brought to bear upon the subject, beets grown in favorable soil in this country, will exceed in saccharine matter that which is produced in Europe under less favorable advantages of soil and climate.—We are informed that W. H. Osborn, Esq., the President of the Illinois Central Rail Road Company, has already concluded an arrangement with a company of Germans to establish a refinery upon his farm at Chatsworth, Ill., the building and machinery for which, is to be ready for the work of the coming season. The contractors will employ fifteen hundred acres of land in the culture of the beet.

In addition to the knowledge we have acquired in the manufacture of the Chinese sugar cane, we have the advantage of the experience of France and Germany in the manufacture of beet-root sugar to guide us, and we may hope that such progress will be made as to soon render us independent of all other countries of sugar, as we now promise to be of molasses.

COTTON CULTURE.

Experience we believe to be the best instructor in the culture of all crops. Therefore we have compiled from various sources, such information, derived from experience of others in cultivating cotton, as we believe will be of the most practical importance to our readers. The directions here contained can be relied upon.

KIND OF SOIL.—"The first inquiry which presents itself is, to know what are the peculiarities of those soils which suit the growth and maturity of cotton. Experience is, perhaps, the safest and most reliable test, in the settlement of this question—and it is now pretty universally conceded, that our best cotton lands are those which are of deep and soft mold, a sort of medium between the sandy and spongy and those soils which are hard and close—those which are penetrated by the warming rays of the sun, imbibing readily the stimulating gases of the atmosphere, and which allow the excess of rain-water to settle so deep into the earth, as to lie at a harmless distance below the roots of the young plant. These are the properties of soil needful to the vigorous growth and early maturity of the cotton plant; and the knowledge of this fact is of great, and perhaps I might add, indispensable importance, to its successful cultivation. For though we may not find, and indeed it is very improbable that we shall often find, all these essentials in the selection of a farm, yet by the aid of the plow, the hoe, and the spade, and the incorporation of foreign substances, we may remedy many defects, and supply many of the peculiar demands of this plant.

PREPARATION OF SOIL.—"The best and most important part of the work in cotton making, consists in a judicious and proper preparation of the soil for planting. It is difficult to say, in all cases, and in the varied condition in which lands are found, and the diversity of soils, what the process of preparation should be; but we lay down general principles for our government, and results to be obtained, and leave the planters to the selection of the best means at command for their accomplishment. All lands for cotton ought, before the crop is planted, to be broken deep, close, and soft; and this to be done long enough before planting to allow the rains gently to settle them. It is the most common and perhaps the best plan, to prepare all lands

intended for cotton, in beds made by the turning-plow; and in wet and flat lands, sometimes an additional elevation ought to be given, by drawing up the beds with the hoe. I think, in this work, we have often followed too much the example of our neighbor, and have looked too little to reason, in the indiscriminate bedding and high elevation of all lands. I am the advocate of deep, soft beds, made by very thorough and close plowing, but cannot consent to the necessity or benefit of elevating much, lands which are warm and dry, and which are not subject to inundations from excessive rains. For the convenience of culture, I would have the young cotton stand on a slight elevation; but when the condition of the land did not require it, I would not give it more."—[*Col. Chamber's Essay*, pp. 11–13.)

Manures.—"Every kind of compost, green crops turned in, cotton-seed, and even naked leaves listed and left to rot, improves this crop. When planted on cotton-seed, and sometimes on strong stable manure, it is more difficult to retain a stand, owing, probably, to the over-stimulus of these strong manures. So, on leaves, unless well-rotted, the cotton will long continue to die, in consequence of the leaves decaying away, and exposing the root too much to sun and rain.—These difficulties may be avoided by a little pains; and by no means justify the opinion entertained by some, that cotton should never be planted on freshly-manured land. The only question is the cost of the manure. A great deal may be made on every plantation, without much trouble or expense, by keeping the stables and stable-yard, hog and cow-pens, well supplied with leaves and straw; and also from pens of corn-cobs, sweepings from negro and fowl-house yards, and rank weeds that spring up about them, collected together and left to rot. Whenever the business is carried further, and a regular force is detached to make manure at all seasons, and entirely left out from the crop, it becomes the owner to enter into a close calculation of the cost and profits. In many agricultural operations, such a course the experience of all countries has proved to be profitable; but these operations partake more of the farming and gardening, than planting character; and whether the same method will do for the extensive planting of short-staple cotton, remains, in the opinion of your Committee, yet to be tested. If anything like an average of past prices can be maintained, it is certain that more can be made by planting largely than by making manure as a crop. If, however, prices continue to fall, and the growing of cotton be confined to a few rich spots—those susceptible of high manuring—then our whole system must be changed, our crops must be curtailed, and, staple-labor losing its past value, the comparative value of a cotton and manure crop will preponderate in favor of the latter. As a substitute for manuring on a large scale, resting and rotation of crops is resorted to. In our right level land, the practice of resting cannot be too highly recommended; and, by a judicious course, such as resting two, and planting two, or at most three years, our lands may not only be kept up forever, but absolutely improved. From rotation of crops, but little is done for cotton.—After small grain—whether from the exhausting nature of that crop, on light lands, or because the stubble keeps the ground rough and porous—cotton will not do well. After corn it is difficult to tend, as, from our usual manner of cultivating corn, grass is always left in full possession of the field. It does best after cotton, or after a year's rest. Rest is the grand restorer, and the rotation chiefly required in the cultivation of cotton."—[*Gov. Hammond's Report*, p. 27.

Application of Manures.—Dr. Cloud, after various experiments, says: "I determined upon a new mode of application entirely, which consisted in spreading all the manure used broadcast. This was done by hauling the manure out on the land, and depositing it in heap rows, say thirty feet apart, and the heaps thirty feet apart in the rows, with ten bushels of manure in each heap. The cotton-rows being first laid, the manure was spread broadcast, and the land bedded out. On or about the 10th of April, the cotton seeds were planted after a spacer, by which the hills are regulated precisely as desired. The result was a perfect stand, with the cotton healthy, and all of the same age. There is no difficulty in understanding the difference here in favor of broadcasting the manure and in bedding out the rows. It is not deposited a half gallon in a place but it is incorporated evenly throughout all the soil. The consequence is, that however rich the manure may be in alkaline matter, its thorough incorporation with the soil, so quickly and effectually dilutes it, as to render it entirely innoxious to young cotton. There was no part of the experiment gave me so much satisfaction as this. Every planter knows the value of a first uniform and perfect stand. I use the term perfect, because, by the use of the spacer, I approximate nearer a perfect stand than it is possible to accomplish by any other process."—[*Dr. Cloud's Experiments*, p. 72.

Planting.—"The distance to be given is the next inquiry to be considered. This is a very

important object, and one upon which we are very dependent for success; and yet it must be varied very much by circumstances, some of which are beyond our knowledge or control.—The general principle may be stated, and then our best judgment must guide us in its application.

"When the crop is at maturity, the branches of the stalks ought slightly to interlock every way. We cannot, therefore, do better in planting, than make an estimate of the probable average to which the weed will grow, dependent, of course, upon the vicissitudes of the seasons. It would, therefore, be vain to attempt to be more specific in directions, which must be varied always to suit the varied character of the soil.—This whole question, then, is to be settled upon the principle already stated. The planting should be in drills, chiefly because of the difficulty of obtaining good stands in hills; and I would add, for the information of those who may be without experience, that in the common medium lands of the country, these rows ought ordinarily to be about five feet apart, and the stalks in the drill should be thinned, so as to stand fifteen or twenty inches from each other. The width of the rows, and the distance in the drill, may be increased upon better lands; and in some cases of very thin lands, it may fall a little below the distance designated. I do not regard it as a matter of indispensable importance, but should decidedly prefer that the rows should run in such direction as to give the plant the largest benefit of the sun, from early morn to its setting. The cotton is decidedly a sun plant.

THE MODE OF PLANTING.—"Here we have many plans, all setting up claims to some peculiar merit. With the preparation which I have indicated, it would hardly be necessary to stop to discuss the relative merits of these modes, or seek to do more for the accomplishment of our purpose than to select some one, which we know to answer well. I therefore advise the use of some small and very narrow plow for the opening furrow. This should be run in the centre of the bed, opening a straight furrow of a uniform size and depth. In this the seed should be strewed by some careful hand scattering them uniformly along the furrow, just thick enough to secure a good stand the whole length of the row. These I would cover with a board, made of some hard wood, an inch or an inch and a half thick, about eight inches broad, and thirty inches long, beveled on the lower edge so as to make it sharp, slightly notched in the middle so as to straddle the row, with a hole bored in the centre one inch from the upper edge, and screwed on the foot of a common shovel or a scooter-plow stock. This wooden scraper and coverer, when drawn over the row, covers the seed nicely, leaving a slight elevation to prevent the settling of water, and dresses the whole surface of the bed neatly for the space of fifteen inches on each side of the drill. Thus all clods or obstructions are removed, and a clean space is left wide enough for the passage of the plow in the first working between the young cotton and the rough land.—This is an advantage of much importance with a crop so tender and small as cotton at this stage.

[To be Continued.]

CULTURE OF TOBACCO

The high price which Tobacco now commands, is inducing many farmers, not only in this latitude, but several degrees north of this, to cultivate this crop. It is cultivated quite extensively in the Eastern States, but can be cultivated much more profitably here, as it requires a long summer to properly develop the plant and bring it to maturity. In the *Valley Farmer* for February 1862, we gave directions for raising the plants, and as we believe it to be the best plan yet recommended, we republish it here as we have thousands of new readers who do not have access to our volume for last year. No time we will here say should be lost in procuring the seed and planting it in the seed bed.

SELECTION OF VARIETY.

The first thing to be attended to, is procuring the seed of the best variety for your particular soil and climate. There is as much difference in the varieties of tobacco as there is in the varieties of wheat, corn, oats, or other crops. Some varieties are earlier, some later, some with larger leaves, some with smaller, some tough, some tender, some good for manufacturing at home, and not good for shipping, and others good for shipping. There are varieties cultivated in New England successfully, not requiring so long a season for maturing. Among these the "Connecticut Seed-Leaf," we believe, stands first. In Virginia, the White Stem and Big Frederick are considered the best varieties for shipping purposes. Almost every neighborhood in Missouri and Kentucky has its favorite variety. Soil and location have so much to do with the success of the plant that we do not feel warranted in recommending any particular variety, but urge the importance of procuring seed of the best variety that can be obtained.

PREPARING THE SEED-BED.

After the seed is procured, the next thing is preparing the seed-bed, or beds, as there prop-

erly should be several of these, or one very large one, which will admit of seed being planted at various times during early spring. The object of this is to have a succession of plants, so that the planter can avail himself of those of the proper size for transplanting at the most opportune period for that object. One thing should be remembered, and that is, that there should be a large surplus of plants raised to meet any contingencies that may occur. Select a dry, warm, sheltered spot, on a southern or south-eastern slope, protected on the west and north by woods. The common method of preparing the bed is to burn the surface before planting. This is done by covering the surface with brush, logs, etc., and burning them when dry. They are piled loosely over the bed, so that the heat can extend downward, and destroy any seeds that may be in the ground. If the logs are laid flat on the ground, this object could not be so well accomplished. The condition of the soil is ameliorated and benefitted by the burning, and the ashes left upon the bed are of great advantage to it. Of course the bed should be cleared of stones, roots and all other improper objects. The bed should be made of fine tilth, and smoothly raked off ready for sowing the seed. "Two tablespoonfuls of seed are recommended for one hundred square yards." We think this is too thin sowing. If the seed is all good, and could be evenly distributed over the ground, it would be enough. The seed is generally mixed with ashes or sand, and then sown over the bed one way and again crosswise. The bed is then tramped down and thickly covered with brush to protect the young plants from the cold, and frost and wind, and yet admitting the heat of the sun. As soon as the danger of frost is over, the brush is removed. The first bed should be sown early in spring, and then at various times during the spring. The bed should be kept thoroughly clear of grass and weeds, and where the plants are crowding one another they should be "thinned out." The fly is sometimes troublesome to the plant-bed. When this is the case, sprinkle dry, fresh ashes, or fresh slaked lime over the leaves of the plant by hand. This is as effective a remedy as we are acquainted with.

RAISING THE PLANTS UNDER GLASS.

It frequently happens that the young plants are all destroyed by frost, notwithstanding they are covered by brush. It is then sometimes too late to re-plant, and get a second growth of plants. To avoid any such result, it is far better to raise the plants in the modern gardeners' hot-bed. In this the plants grow rapidly, are not subject to being killed by the frost, and are always certain, if properly managed, to be of suitable size for transplanting at the first favorable season. Where they are planted under brush and killed, the second growth comes so late, that the season of planting is delayed perhaps several weeks, the young plants are overtaken by the drouth of summer or by the frost in fall, and thus the crop may be almost entirely lost; but when planted under glass no such contingency occurs.

In the February number of the *Valley Farmer* for 1860, we gave the directions for raising the plants under glass, and recommend our readers to follow this plan, if they conveniently can. It is as follows:

A rich loam is the best soil for a plant-bed. If not rich, it should be made so, by the application of old barn-yard compost (free from the seeds of weeds and grass), or a slight sprinkling of guano, well worked into the soil, some weeks before planting; or wood ashes, in moderate quantity. The ground should be thoroughly pulverized to the depth of the soil, and raked smooth and level, and before planting it should be firmly trod with the feet or pressed with a roller. The seed may be sown any time in March, at the rate of a gill of seed to five square yards of ground. It is well to mix the seed with one quart of Plaster of Paris, or ashes, which aids in its more equal distribution. Another thorough tramping will sufficiently press and cover the seed. The ground for the bed should be raised a few inches above the surrounding surface, with a slight southern inclination. This should be surrounded with a tight plank frame, raised say twelve inches high on the north or back side, and eight inches high on the front, and the top covered with glazed frames of any convenient size, as used by market gardeners. The earth should be kept moderately wet, and in hot days the sashes should be raised at one end for ventilation. Care should be taken, as the season advances, and the heat of the mid-day sun increases, to cover the glass with some open material to slightly break the more intense rays of the sun.

Farmers not accustomed to the management of hot-beds, while giving this method a trial, might continue a small bed on the old plan. But an acquaintance with the advantages of the former, would, we are confident, lead to its general adoption and add materially to the success of the crop.

For the following directions we are indebted

to Campbell's Agriculture, containing the best instructions with which we are acquainted:

PREPARATION OF THE SOIL.

This is a point of the very first importance in making a crop of tobacco. The soil must be both rich and mellow. If the land is newly cleared, all the undergrowth must be well grubbed out, and everything be burnt upon the land, or removed from the surface, which would impede the culture of the crop. This should be followed by two or three thorough coulterings, with strong teams, so as to break up as completely as possible all roots left in the soil. Hands should follow the coulter to cut out and remove all the broken and exposed roots. The soil should be thoroughly plowed, and then listed and hilled in the best way, which the number of stumps present, and the general character of the surface will permit. Sometimes the hilling has to be done altogether with hoes, on account of the steepness or roughness of the ground. Such is often the case on the steep lands of those counties lying along the base of the Blue Ridge, and in many other places. At other times the soil may be first thrown up into beds or lists, and these be divided into hills with the hoes.

New land is generally the best for tobacco. But in the best tobacco-growing sections, the land is nearly all cleared, except so much as is required to be kept in timber for fencing and fuel. The preparation of old land is here the matter of most importance. The point to be attained is to get a rich soil, deep and well pulverized. Tobacco requires an abundant supply of ammonia, as well as mineral matter, especially lime and potassa, with phosphoric and sulphuric acids. Hence, guano and rich stable or hog-pen manures, lime, ashes, plaster, and the phosphates, are all valuable fertilizers for this crop, unless they are already present abundantly in the soil. It has been shown that ammonia is not generally abundant in soils that have been frequently cultivated without manure; hence, old land usually requires an application of some form of ammoniferous manure, to secure a full crop of tobacco. A good clover or pea fallow may be plowed down in the fall, and manured well and re-plowed in the spring, with sub-soiling, where the land requires it; then, if necessary, in order to get it fully pulverized, let it be stirred with shovel-plows, and well harrowed. This will mingle the manure thoroughly with the soil, as well as reduce the soil itself to the desired condition. If manure is not abundant, some guano should be mixed with it, and a smaller quantity will then answer the purpose. All wet lands must be well drained for tobacco.

LISTING* AND HILLING.

Listing here consists in throwing up small parallel ridges with the mould-board plow, at proper distances for the rows of tobacco. These ridges are often called "lists." The distance between the tops of these—or, in other words, the distance between the rows of tobacco—should be from 3½ to 4½ feet, varying with the soil and variety cultivated. The width should always be sufficient to allow the hands to pass between the rows, when the crop is fully grown, without danger of breaking the leaves. To secure uniformity of distance between the lists, it is best to lay off the ground first with single furrows, at the required distance, and upon each one of these, as a central line, throw up the soil equally from both sides, with the mould-board plow, until all the soil has been thrown out from the middle of the intervening spaces. The lists may then be divided into sections, out of which the hills are to be formed. The hills should be about 3 feet apart in the rows. This distance can be regulated, with considerable uniformity, by running a shovel-plow across the lists at right angles, making cross furrows 3 feet apart. The sections into which the lists, or ridges, are thus divided, are then heaped up in the form of sharply-peaked, conical hills, thus to remain until they are to receive the plants.

The hilling serves several important purposes: 1. It elevates the plant, so as to prevent the points of its lowest leaves from reaching the ground so readily, and becoming soiled. 2. On soils which retain much water in wet seasons, the plants are kept with a large portion of their roots above the water which settles along the furrows. But if wet seasons continue long, the crop is always injured, notwithstanding the elevation of the hills. 3. The air has more free circulation beneath the leaves when they become large, if the plants are thus elevated.

PLANTING.

The season best suited for field planting, in Virginia, is from about the middle of May till about the middle of June, or later, in the southern part of the State. The process of planting can be carried on only when there is a considerable quantity of moisture in the hills, else just before there is a certain prospect of immediate rain; that is, just before or just after a rain. The hills are prepared to receive the plants, by having their conical tops cut off with the hoe, and the flat surface thus formed, pressed down or struck with the lower face of the same instrument, so as to form a compact soil to receive the roots of the plant. While this operation is performed by one set of hands, others should be engaged in setting the plants. A careful man should draw the plants from the bed, which can be done with the hand alone, if the soil of the bed is loose and moist; but if the bed has become somewhat hard, as often happens where there is much clay in the soil, the aid of a sharp, flat instrument to pass under the roots may be necessary, as it is important to guard against bruising either the top or root of the young and tender plant.

Some of the weaker hands take the plants in baskets, and, following those engaged in flattening the hills, drop a plant at each hill; while others follow with sharpened sticks or pegs, with

* "Listing," in Southern agriculture, denotes: (1) The dividing of land into narrow strips by furrows, as in preparing it for planting corn. (2) The same term is used to indicate the process of throwing the surface soil up into small parallel ridges, out of which the tobacco hills are afterwards formed.

which they make holes in the centres of the hills, to receive the roots. Care should be taken to have the root extend straight downward in the hole, and not doubled back upon itself; it is then more certain to grow, and to grow well. The plant should be inserted low enough to have all the root completely covered, but not so low as to let the bud be below the surface. After the root has been inserted in the hill, the soil is firmly pressed around it. If the ground is not very moist, or if the sun is very hot, at the time of planting, a leaf of some kind, or a little handful of broken straw or chaff, should be laid over each plant till it has taken root.

The same ground should be passed over at every good planting season, for the purpose of re-planting. Some plants of the first setting will have died, while others will have been destroyed by cut-worms. To secure a plant to every hill, then, the re-planting may have to be repeated several times.

Another method of planting, differing a little from that just described, is said to be pursued by a very intelligent and successful planter in Buckingham county. His land is prepared and listed in the method just given; but instead of making hills, he lets the ridges (lists) stand as they are thrown up by the plow, until he is ready to plant. The tops of the lists are then flattened, and at the same time compressed, by running a one horse roller along them from end to end. The roller is made sufficiently long to rest upon two lists at the same time, while the horse that draws it walks between. There is, moreover, an attachment to the roller for marking off the stations for the plants, at a uniform distance. This consists of pegs projecting from the surface of the roller, and so situated that each one will make a hole for a plant at every revolution; while those at the same end are just as far apart on the surface of the roller, as the plants are to be distant in the rows. If the diameter of the roller is near two feet, the circumference will be about six. Now two pegs, placed on opposite sides of a roller of that size, would, during its revolutions, mark off spaces of three feet each; that is, two spaces for every revolution. Each end of the machine may thus be made to flatten the top of a list, and at the same time leave holes prepared to receive the plant. The difficulty of making a single peg always strike the centre of the list as it comes around, may be obviated by having several pegs near together, in a line running lengthwise. Some one of these will be certain to leave a hole near enough the middle of the list for the plant. The plants are next dropped and set by hands following the roller.

This method has the advantage of substituting cheap horse-labor for more expensive hand-labor; but it may have more than compensating disadvantages. In rough or stumpy land, it would be impracticable. It omits the hoe-dressing applied in hilling. The plants are in rows in only one direction, and, consequently, cross-plowing cannot be done. Still, the plan is worthy of a fair trial, and on many fields may greatly economize labor. The substitution of horses or mules for men is a point at which all farmers should aim, wherever such substitutions can be made. The hire of a first-class hand for one year would buy a good mule; while the expense of keeping the hand one year would feed the mule for two years. Then in many operations the mule, with a little management, can be made to do the work of two or three good hands.

CULTURE.

The two leading objects to be kept in view in the culture of tobacco, are the same as those mentioned in connection with the culture of corn: (1) All weeds and grass must be kept down, and (2) the ground must be kept mellow and well aired. The culture should be commenced as soon after planting as possible, and kept up constantly until the plants are too large for its continuance. Within a week or too after planting, the soil on the surface of the hills may become crusted, especially in clay soils; also grass and weeds may begin to make their first appearance. In either case the hoe should be applied, to scrape down the surface of the hills. A clean, loose surface will thus be formed around the plants. This should be followed by a deep plowing, which should be made so close to the rows as to cut down a considerable portion of the hills, the mould being thrown out into the spaces between the rows. Guano, or a mixture of guano and salt, should then be applied. By a subsequent plowing within a week or two, the soil should be thrown up again to the rows, and the hills again dressed up with the hoes. The kind of plow used must be determined by the character and condition of the soil. To a firm soil, the coulter should be first applied to as great a depth as possible; then the shovel, or small mould-board, for throwing the earth to and from the hills. In short, the best means should be adopted for accomplishing the two objects above mentioned.

[To be Continued.]

Seed, Soil and Culture of Sorghum.—The Committee appointed by the Ohio Sorghum Convention, to report on the above topics, made their report as follows:

"Your Committee on Seed, Soil and Cultivation, report that in their view the best variety of seed for all purposes, is the Sorghum or Chinese cane, especially for syrup. For granulation, they recommend the Imphee called Oomsee-a-na, which they think identical with that which is now mis-called Otaheitan. As a very early variety, they propose the kind of Imphee called Nee-a-za-na, though this last variety is not generally desirable.

"*Soil*—Good wheat land is considered the best soil for this cane. The particular composition of this soil should be sandy, inclined to limestone, with a sufficiency of clay to hold the soil tolerably compact.

"*Cultivation*—The soil should be worked deep, thoroughly pulverized and rolled firm. Plant in check-rows the same distance apart as corn. Cultivate flat and thoroughly, till the plants are three feet high, not afterwards. Plant as early as practicable."

Hallet's Pedigree Nursery Wheat.

[Continued from Feb. No.]

It has for the past twelve years been my conviction that a good pedigree is as valuable in plants as in animals, and that in the careful rearing of seed which has this qualification lies our only means of materially increasing the produce of cereals. Amongst animals, whether horses, cattle, sheep, or pigs, the importance of "pedigree" is fully recognized, as also even in reference to some of our agricultural plants; for if a farmer wants a good cabbage, mangold, turnip, or carrot, he selects the seed from a good parent, but the moment he deals with the cereals he almost ignores the great principle of like producing like, which he admits, in the foregoing cases, to be not only a right one, but so important as to deserve much attention, and repay much outlay. Yet the minutest characteristics of a plant of wheat will be reproduced in its descendants; so much so, that we can not only perpetuate the advantages presented to us in an individual ear, but, by the accumulation of selection, make further advances in any desired direction; the union of good qualities imparting a cumulative force, and their successive renewals and establishment conferring, as in animals, a "fixity of type." To me it has always appeared that, while offering an earnest of what a better system would effect, the mode in which the best varieties of our cereals have been raised (that of starting with accidentally fine ears, and simply keeping the produce unmixed without any further selection), is a very imperfect one, and that its attainments are perhaps of less value than the earnest which it offers of future success under a more complete system: for such beginning (and ending, so far as selection is concerned,) with an accidentally fine ear, is a very different thing from starting annually with one of a known lineage. Look at the almost parallel case of two heifers, identical in every respect but that of "pedigree;" the one what she is by accident, the other by design; the one is worth £25, the other £300; from the one you may obtain any imaginable kind of progeny, from the other only a good kind.

The formation of a race of high-bred cereals, in many respects admits of more rapid, complete and satisfactory development than that of animals; first, because they are far more prolific, which gives much greater choice in each renewed selection (besides favoring a rapid extension of the improved breed); and next, because instead of that "delicacy of constitution" often found in high-bred animals, the very opposite character will prevail in the pedigree plant, which is descended from a line of ancestors, each of which was the most vigorous of its year, and possesses in combination those various good properties by which they, more successfully than others, withstood the vicissitudes of season experienced during the years of selection. In illustration of these principles of selection, I now give the following results, due to their influence alone—as the kind of seed, the land, and the system of culture employed were precisely the same for every plant for five consecutive years; neither was any manure used, nor any artificial means of fostering the plants resorted to.

Showing the Importance of Each Additional Generation of Selection.—1857, Original Ear, in length, 4¾ inches, containing 47 grains; 1858, Finest Ear 6½ inches containing 79 grains, 10 Ears on finest stool; 1859, Finest Ear 7¾ inches 91 grains, 22 Ears on finest stool; 1860, Ears imperfect from wet season, 39 Ears on finest stool; 1861, Finest Ear, 8¾ inches, 123 grains, 52 Ears on finest stool; 1862, Ears not yet (June) perfected, but 18 "rows" are found up one side, 80 Ears on finest stool.

Thus, by means of repeated selection alone, the length of the ears has been doubled, their contents nearly trebled, and the "tillering" power of the seed increased eight-fold. The practice adopted in the case of roots of procuring seed from the finest parents is thus found applicable in an eminent degree to wheat also; and it is a very remarkable circumstance, strongly exemplifying the importance of repeated selection of wheat, that of the grains in the same ear one is found greatly to excel all the others in producing power. Thus, just as this was in a wonderful manner the case with one of the grains in the original ears, so, last year (1861), the grains from the largest ear of the finest stool of the preceding year having been planted 12 inches apart in a row which was the same distance from the next row, one of them was found to produce a stool consisting of 52 ears, those next to and on either side of it consisting of 29 and 17 ears respectively, and the finest of all the other stools consisting of only 40 ears. By planting the grains in such a manner as to form a diagram of the position occupied by each when in the ear, I have endeavored to ascertain if this superior grain grows in any peculiar place in the ear, but have not yet been able to arrive at any conclusion upon this point. Practically, however, I secure the best by planting all the grains and starting afresh every year with that one which has proved itself the best.

I will briefly state why I commenced with so small an original ear. I had for several years previously experimented on accidentally large ears, irrespective of the quality of the grain they contained; the invariable result was a sample so coarse as to be almost unsaleable. Convinced that this did not naturally result from the attainment of a perfect growth in the plant, but rather arose from the fact that the large parent ears from the peculiarity of their growth themselves contained coarse grain, I determined to commence with a fine quality of grain irrespective of the size of the ear, trusting to pedigree for the gradual attainment of fine ears. I therefore started with the Nursery wheat as the finest quality of red wheat known, as I have since done with several kinds of white wheat, such as Colonel le Couteur's Bellevue Talavera, (kindly sent to me by the Colonel for that purpose), Hunter's White, and several kinds of Australian white wheat, which were all fixed upon on account of their quality alone; also with English Chevalier barley (of 58 lbs. per bushel) and both white and black oats.

But the natural system of planting wheat re-

quires that it be done at the right time. A grain which has to occupy a large space and to produce from 20 to 50 ears requires more time for its growth than one which has no such place to cover and is to produce only two or three ears—hence the necessity of apportioning the quantity of seed employed to the time at which it is committed to the ground and to its power of tillering; the difference in tillering power between the grains, even those from the same ear, of a non-Pedigree wheat is so very great that this apportionment could not be made, for any distance which gave sufficient room for the most vigorous grains would give far more than sufficient for those least so. By repeated selection, however, starting annually from a single grain, the vital powers of the descendants become equalized in a very remarkable degree, and this takes place in proportion to the length of time during which this process has been continued.

In 1860, the Pedigree wheat, planted singly and early, 9 inches apart every way, or one bushel on six acres, produced, notwithstanding the extraordinary character of the season, 1¾ bushels on 698 square feet of land unmanured, or 13½ quarters per acre, equal to 804 for 1 of seed.

My natural system of cultivating wheat, then, means the planting of single grains at such a distance as affords each just sufficient space for its full development, and at such a period of the year as allows time for its accomplishment.

When the Pedigree wheat is employed as seed these conditions of time and space are best fulfilled by planting the grains nine inches apart every way at the end of August or the very beginning of September. This would give the fullest possible advantage of the system, but throughout the whole Autumn a very large proportion of such full benefit may be reaped by following the directions given below.

An extraordinary success, however, is to be expected from September planting only, although if the Autumn prove an open one, it will often attend much later planting. The diminished distance of the grains apart necessary as the season advances interferes proportionately with the full development of the plant, although even at the very latest this takes place to a very slight extent when compared with the ordinary mode of sowing two bushels per acre where the plants become so crowded that many perish entirely. It has been said by a high authority that ninety per cent. of the stalks found in spring are missing at harvest. It should, however, always be carefully borne in mind that the finest possible ears can be obtained only when the roots of the plant are perfectly unimpeded in their growth.

Poultry Dung.—Have this regularly swept up every Saturday, packed away in barrels, and sprinkled over with plaster. Dana, with force and truth says—"The strongest of all manures is found in the droppings of the poultry yard. Next year each barrel of it will manure you half an acre of land. Save it then, and add to the productive energies of your soil. Don't look upon it as too trifling a matter for your attention; but recollect that the globe itself is an aggregation of small matters.

Discussions at the Ohio Sorghum Convention.

Mr. Hedges, on opening this discussion, stated that there were two varieties of cane in this country, the Sorgho and the Imphee. Of the Imphee varieties, he preferred the Oomseana, which he thinks is the same as the Otaheitean, now so much spoken of in some portions of Illinois. He exhibited several specimens of the seed heads as evidence of his position. He thinks middle table lands, not very poor, are best for its production; rich bottom lands will yield abundantly, but not of the best quality.

At this point, Jno. L. Gill presented a dispatch from Mr. Blackwell, of New York, announcing that he had been successful in manufacturing sugar from all the varieties of syrup which he had procured in his late trip through the West, comprising almost every variety of soil and cane.

Mr. Hedges insisted upon preparing the ground thoroughly and nicely, and planting the seed as shallow as possible.

Mr. Wrenn stated that in his experiment with the Imphee, he had obtained from one variety of seed, some 14 different looking specimens or varieties, much of it was like what was described as the Liberian. He urged that the cane should not be stripped till ripe, and that it does not injure it to stand for some time after cutting it up. He prefers the Sorgho, all things considered. He preferred sprouting the seed before planting, and cultivating until it was at least three feet high.

Mr. Julian prefers to take the heads off before ripening. Mr. Long also recommended the same, and cited as an example the statement of a missionary in China, who stated that the Chinese pull out the head sections of the stalks when they begin to shoot.

In preparing seed, Mr. Long pours hot water over it and then wraps it up in paper before planting. Mr. Gill stated that he had soaked some seed in water for ten days, and afterwards planted some dry, and that they came up at the same time; he concluded he had soaked it too long. Jacob Schaffer stated, that he had soaked some seed in hot water and that it came up soon. Mr. Clinton stated, that a neighbor of his had an excellent yield of syrup from a patch of cane which he had neglected to cultivate while young, that he soaked, sprouted, and rolled the seed in plaster; the older and more matured the cane, the most and best syrup was made.

Mr. Beidler stated, that he put the ground in good order and planted shallow, and as soon as possible, and that it came up as soon as the soaked seed; with him Sorgho did well, and Imphee failed; he cuts before heavy frosts, strips the leaves and piles up the cane out of doors; has kept it for five weeks.

Mr. Key ploughed deep and covered shallow, seed would not come up when planted too deep, he cuts and piles away before working; finds it improves the quality of the juice.

Mr. Willis asked if there was any necessity for stripping cane before crushing. Mr. Blynn, of Rockford, Ill., said that in his section it made no difference whether stripped or not, and thinks

stripping will be abandoned in his section; finds the cane does best on upland prairie; cuts up as soon as will answer, and puts in small piles and covers it over to protect it from the weather.

Mr. Terrill says he worked cane without stripping and found it as good as any other method. Mr. Jewell of Chicago said, that from his acquaintance with the workers throughout that region, it was better to remove the leaves, and by being cross-piled as cord-wood, may be kept from three to four months.

Mr. Franklin recommends scalding the seed about ten seconds, and that highly manured land will not answer; the cane will look well, but will not be good. He also recommends under-draining, good plowing and sub-soiling; he uses about 30 bushels of lime to the acre, to sweeten the soil. Cane should be cut just as it comes to maturity; he thinks topping in the milk a good plan.

Mr. Cory, of Indiana, finds a difficulty in planting in furrows—makes a deep furrow with a shovel plow east and west, and plants on the south side of the furrow ridge: also finds it useful to sprinkle ashes and lime on the plant when small, to keep off insects. He would not remove the tops until the cane is ready for working.

Mr. Gill suggested that planting thickly will not prevent suckering. Mr. Branch planted few stalks in a hill, they threw up an immense number of suckers, but he thought them no objection, the suckers were just about as good as the original stems. He plowed his land in the fall, and again in the spring, harrowed it twice, worked the crop with the hoe and the cultivator alone—the same process as with a field of corn—was very successful in his locality, where a drouth prevailed from June until October.

Mr. Wynn thought that there was usually not enough seed planted to the acre.

In taking the vote of the convention upon the process of suckering, the decision was largely against it; also upon planting thick and thinning out, it was largely objected to.

The President said that stripping was the cleanest and best method, especially if the leaves were mildewed. Mr. Fetters said he lost a crop for that reason by not stripping.

A vote upon the choice of seed for all purposes was largely in the majority for the Sorgho.

Mr. Nesselrode thought that the cane should be cut just when it began to ripen.

Mr. Gill, Jr., thought that from his experience in the purchase of imported seed, the native seed was the best and that farmers should prefer to raise their own seed.

EVENING SESSION.

The subjects of mills and apparatus were taken up, and each speaker was allowed ten minutes.

Mr. Elliott, of Cincinnati, opened the discussion by explaining a model of a mill manufactured by Wm. H. Clark. Mr. Gill then explained the improvements in his mill. Mr. Hanson, of Lake Co., spoke of a two roller mill which he invented for his own use, and thought it preferable to those of three rollers. It was generally conceded that those with three rollers were best.

Mr. Cooper then explained the construction of his machinery. Mr. Jewell, of the firm of Gates and Co., of Illinois, explained apparatus made by them and the model of their steam evaporator.

Mr. Neal explained the construction of their evaporating apparatus. Mr. Jacobs, of Franklin Co., spoke of the difficulties of clarifying the syrup even through bone coal, and recommended rapid evaporation, at a temperature of not over 230° Fahrenheit, exhibiting at the same time a model of his evaporator. Mr. Day, of Richland, explained the Cook evaporator. Mr. Cory, of Indiana, spoke of the improvements he had introduced in the Cook evaporator.

Other apparatus was exhibited by Mr. Tufts, Mr. McClinton, Mr. Goodrich, and others, all tending to prove the necessity of rapid evaporation, thorough defecation and diligent skimming; great care being required also to keep the syrup from being scorched by heating too highly.

The convention then adjourned until to-morrow morning at 9 o'clock.

WEDNESDAY, JAN. 7TH, 1863.

The Convention met pursuant to adjournment. The Chair introduced Mr. Pierson, President of the Horticultural Society of Cincinnati, and Mr. Walden, of College Hill, Hamilton Co., who both expressed their surprise at the fine samples of sugar and syrup and the quantity of them, and that so much had been done in this interesting department of Agriculture.

The subject of products was taken up. During the discussion, much interesting information was elicited from the members of the Convention, all showing the necessity of using re-agents to neutralize the acid in the juice, and to assist in removing fecula and gummy matter so abundant therein. Professor T. G. Wormley of the Medical College, of Columbus, explained the different kinds of sugar known to chemists and the difficulty of producing crystalizable sugar from the Sorgho; also the difficulty of determining accurately the true difference between cane and grape sugar, even by the aid of polarized light. Prof. Wormley was also requested by the Convention to make an analysis of the sugars presented, and publish the report as early as convenient.

From the many statements presented by the different members, great hopes may be entertained of the ultimate success of producing a good article of sugar from the Northern canes

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IN the second half of the 15th century, Russia was but 18,000 square miles in extent. Now it covers 392,000 square miles. In 1722 the population of the empire was 14 millions; now it is 65 millions.

VEGETABLE OILS OF AUSTRALIA.—In Australia there are vast forests of trees which yield several varieties of essential oils. Thirty-five different kinds of essential oils have been distilled from the trees of the Australian forests, and about 12,000,000 acres are covered with such trees. Some of them are aromatic and yield delightful perfumes. They are also solvents for various resins which are employed in making varnishes.

CARROTS PER ACRE.

A case is reported from Michigan, in the *Country Gentleman*, of a farmer who raised an interesting crop from an acre of ground.

"The soil was a sandy loam on a clay sub-soil not very far below. It had been broken up two seasons previously, and an old turf turned under. The first season it was devoted to potatoes, the first crop I suppose ever raised from it besides grass; and the second year to carrots with a fair manuring. This year it was well manured again, sowed with carrots in drills 3 feet apart, and cultivated with horse power. At the present stage of growth the rows were thinned by the hoe, leaving as a rule the plants the width of the hoe apart. About the middle of July, the spaces between the rows were sowed with flat turnip seed, by hand. No more weeding was done, the turnips sown taking the place of those unwelcome intruders, with their broad leaves. In part of one row in carrots where the seed failed, mangolds were sown. The labor expended in weeding was nothing comparatively."

So much for the ground, its preparation, and the management of the crop. Now for the result. There were one thousand bushels of excellent carrots; two hundred and fifty bushels of white turnips, and thirty bushels of mangolds.

If this is correctly reported, here is something encouraging. Take it for a single crop, the insowing of turnips will do. It will enlarge the product for the year. But it will certainly take from the strength of the soil. Now the question is: Will the same quantity of manure, by *crowding* a crop, be as beneficial as if less were raised, work, and all considered? We see no particular reason why this may not be done.—Get all you can from your soil, if there is no loss of labor, for you can never strain your soil, nor hurt it by great crops. It needs but a replenishing of manure.

The old turf, in this case, plowed under two years before, had much to do with this crop. The sod had time to thoroughly rot. Not only that—this rotting, or decomposition, had the effect of enriching the soil immediately above it, by the gases which escaped in the decomposing operation, and these are the best of fertilizers. These are the gases which escape from exposed manures. Hence the sub-soil was in the finest possible condition for just the crop that was sown. The roots of the carrots reached this manured stratum, and luxuriated in its fatness.

For corn, we prefer a late-fall or very early-spring plowing, where sward is turned in. Our reason is: The decomposition or fermentation which takes place when the established warm weather ensues, adds warmth and friability—just what is wanted for the roots of corn—and just where it is wanted—deep in the ground, affecting more or less the whole super-soil. Hence we have seen the most excellent effects of the turning under of green sward for corn. At first it will not do so well, which is a drawback on this mode of treatment. However, if plowed early, as is requisite, the sun and frost have an effect in preparing the raw ground brought up from beneath; and in favorable (early) seasons, the effect is commensurate.

Moreover, if the sub-soil is of clay, the fermentation warms and mellows the clay, so that the roots dip into it and feed on its richness.—Then, the plow let in a little deeper to bring up, not only the fermented turf, but the affected clay, there will be a surface which, for grass, is rarely exceeded, and will grow any crop. This is an excellent mode. We have seen it done repeatedly, with the greatest satisfaction, and have performed it often ourselves.

HONEY BEE-CULTURE.

Ed. Valley Farmer: Allow me to make a few suggestive hints to your numerous readers, pertaining to the culture of the honey-bee. It has long since been considered a branch of agriculture, although it has been seriously neglected. Having been exclusively engaged for several years past in their study and culture, I have become fully convinced that there is no kind of business, with the same amount of capital invested, that will pay half as well. The success of the business depends upon *three* great points: the *man*, the *hive*, and the *season*.

If the bee-keeper is skilled in the management of his bees, and has a hive that is rightly constructed, and the season is a favorable one, it is not an uncommon thing for him to realize ten, and in many instances, fifteen and twenty dollars profit from each prosperous hive yearly, thus paying three and four hundred per cent. on the investment. According to ancient history, *honey* at one time was the only sweet known. In Aristotle's and Pliny's day, who flourished over two thousand years ago, we learn that bees were then cultivated to some extent, although like many other things perfected and improved very much since. Within the past ten or fifteen years, there has been more progress made in their culture and management, than for centuries previous.

There seems to have never been a time, since our earliest history, when bee-culture should demand our attention more than at the present, when *war* and heavy taxation, the great scarcity and high price of sugar is staring us in the face, I say why should we not encourage the culture of the bee upon a more extended scale, and raise honey by the quantity, as some few now do, thus enabling us to meet the heavy taxes, and affording us a handsome income besides. With

right care and management and a favorable season, it will require but a few swarms of bees to raise a ton of honey. If a colony of bees come out strong in the spring (as they will if properly wintered), it is an easy matter to realize 50and 75 pounds, and sometimes much more; besides a young swarm or two, which will be thrown off, if properly attended to.

Good honey readily commands a high price in market, and probably will for years to come.—Under the present condition of our country, and the high price of sugar, it certainly behooves us to live as much as possible within ourselves, independent of the *South*. There is honey enough wasted every year to supply us with all the sweet we need. If we had the bees to collect it, there could be more honey *produced* north of Mason's and Dixon's line than there ever were sugar south of it, and not cost the producer one half what sugar now costs the Southern planter. There is no place in the world so well adapted to the large yield of honey as the northern portion of the United States with its fertile hills, valleys, and broad spread prairies of the West. Certainly, for amount, and quality of *honey*, we stand at the head of any other country in the world, if we would but improve it.

There is no danger of over-stocking our market with honey, as the consumers increase faster than the producers.

There is no danger of over-stocking our country with *Bees* as some persons have imagined, especially the *fertile portions* of it, as all honey-producing plants yield their sweets days together and sometimes weeks, depending much upon the state of the weather and the species of flower.

Those about to engage in the culture of this delightful little insect, should first get posted by consulting some scientific bee-keeper, or be guided by some good book upon the subject, to insure success in the business. K. P. KIDDER.

MIXED CROPS.

Any kind of vegetables, as beans, peas, or vetches, if sown in conjunction with some kinds of grain, spring rye, barley, or oats, will yield a far more abundant crop than if the two were sown separately. It has long been known that leguminous plants, when sown among grain on a soil which is so dry that they could not have produced a crop planted by themselves, will yield well with an apparent diminution of the crop of grain. Thus, according to the experience of a majority of agriculturists, wheat, intermingled with rye, may succeed on land which cannot be made to bear wheat alone; and, when sown in this way, the wheat crops are finer than they would be in places where they can be cultivated without any other grain. This admixture of wheat and rye also succeeds when sown upon wheat stubble, where every one knows from experience that wheat will not thrive alone, even when the soil is otherwise perfectly adapted to its growth.

Experience likewise confirms the hypothesis that by means of some intermediate crop of some other nature, that true proportion of the elementary substances which are suitable to one species of grain may be re-established. Wheat sown after barley does not thrive well unless the soil was so excessively rich that it needed the preliminary crop to render it suitable for wheat. Rye sown after rye succeeds better, but even then the produce in grain is considerably diminished.

But if a crop of those plants, which belong to class *diadelphia*, as peas, beans, or clover, be interposed, then the second crop of any variety of grain will turn out well; and if the peas, beans, or clover, are cut while green, or if the second cutting of the clover be plowed in, there is every probability that the second crop of grain will surpass the first.

[Written for the Valley Farmer.]

TOOLS.

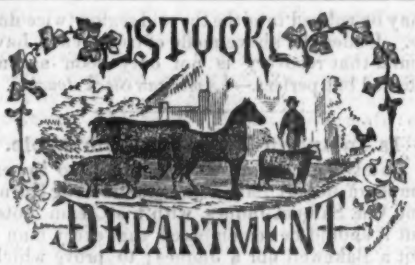
I wish to urge upon my brother farmers the great necessity of procuring good Agricultural Implements, and good tools generally. A man can plow, for instance, one-third more with a good, well-shaped plow, than he can with a poor make-shift of a thing, and do it twice as well and with more ease to his team. Besides there is infinitely more pleasure in the operation. As it is with a good plow, so with a grain-cradle, scythe, hoe, or any other kind of an implement.

A good farmer should not only supply himself with the best plows, &c,, but he should have at least twenty-five dollars' worth of carpenter's, mason's, blacksmith's, and shoemaker's tools. Fifty dollars judiciously laid out in this way would not be a bad investment. The money that some farmers annually spend for *grog*, or at the card table, would, in a year or two, purchase everything needed—and how much better spent in this way.

Then, the farmer ought to have a workshop to keep his tools in. A comfortable house in which he could, on rainy days, mend or make plow-stocks, harness, gates, and such like, especially if he kept a supply of dry seasoned timber, some leather, &c.

It is not enough to have good agricultural and other implements and tools; they must be kept in order. A dull axe, plow, plane-bit, or anything of that kind, is an abomination to a good farmer. If you commence a job and find the implement out of order, better stop and fix it, or get it fixed. Time thus spent is well spent. But the better way is not to wait till you go to use anything before putting it in order. This should be done on rainy days, or when other work is not too pressing. Indeed, business should never be too pressing or urgent to keep things in good order. Remember, that "a stitch in time saves nine." S. D. CARUTHERS.

Fredrickstown, Mo.



FATTENING ANIMALS.

There is difference in fattening animals—a wide difference. Some thrive better than others on the same feed, because the stock, or breed, is different. Some, because there is better treatment and attendance. Such are the reports. In fact, all kinds of variations are reported.—Whence this difference? One man says he has found grain less beneficial than roots with grain, or even roots alone. Another says steaming does the thing; steamed or cooked provender. Alderman Mechi says "the profits of twenty acres of roots all went into the manure heap of the ungrateful bullocks."

What shall we do in the face of such contradictions?—contradictions that are pointed to by the opposers of "book farming." Why, arrive at the truth, which is seen running through the whole, and which any opponent of the science of farming may see, namely, that any nutritious food fed regularly and what the animal wants, with proper shelter, and good treatment, will fatten the animal, and bring profit to the owner.

There may be sudden and great changes in market, which may make it unprofitable—which may make any treatment unprofitable. But, generally, nutritious food, properly administered, will pay in fattening. Is not this the experience of mankind in general? Each farmer knows what feed he has on hand that he can spare best, and feed rather than sell. We are the creatures of circumstances in a great measure. The wise man is the one that takes advantage of these circumstances. Nature has provided a variety of food, and enabled us to select. All kinds are good. Some are better, it is true. But this is generally known, and the experiments, on the whole, aid us in this knowledge. But they are not so great—the difference is not so great as some wise-acres would wish us to understand.

Good treatment is the first great law of nature. Good feed then comes in excellently. Good breed will help, but not so much as those who have the breed to sell would have us believe. Trust a man of good judgment in this case—trust him rather than a poor judgment with all the improvements before him. What we wish to enforce in this article is, to not be carried away by every man's experiment, but trust to one's own experimental judgment as well: for, it is not to be expected that any one department is free from extremes, excesses. For these extremes we must make allowance, or we are wrong.

Do we ignore "book farming" by this? By no means. There is much good in that, but not all good; and it is the business of this article to say it.

When an experiment is made, and *generally adopted;* that is favorable. We know there is a difference in the breed of cattle with respect to fattening, as well as to dairy products. This is generally known. But there are some things only known—not adopted. We must look with suspicion upon these. The world is full of them. They embrace all kinds of quackery. To be cautious is better than to be over-enthusiastic. Read and digest. Look for yourself. If you are interested, if you are anxious, there will be little difficulty. If you are careless, it matters little what knowledge you have. There is but one truth about everything. If you cannot get at that, take the "course between," or the general course, till you see your way clearer. Fatten your animals in the way you know (by experience) will be a profit to you. If you wish to experiment, experiment—and let it be only that. And do not depend upon one trial; look at all the points in the case. *Rely* only upon what you *know* by experience or observation, to be the case. Good treatment then, and *any* good feed—not leaving out a *known* good breed. But use judgment in all.

Cure for Foot Rot in Sheep.—A. A. Goff, Farmington, Ohio, contributes to the *American Agriculturist*, the following preparation for curing foot rot in sheep, which he says has been very effective in his neighborhood.

Mix three ounces each, of blue vitriol (sulphate of copper), white vitriol (sulphate of zinc), verdigris (acetate of copper) and gunpowder, add a pint each, of alcohol, spirits turpentine and strong vinegar, cork up tightly a few days before using. It is easily applied from a vial having a quill inserted through the cork. By dropping this mixture into the affected parts three times once in ten days, a cure will be effected. Sulphate of copper in a strong solution, has long been used as a specific for the cure of foot rot: whether the addition of the other articles is beneficial, we are in doubt. In applying either remedy, it is essential to pare away the hoof to get at the diseased tissues, and thoroughly saturate them with liquid. The solution of blue vitriol should be used as hot as can be borne by the hand.

Treatment of Distemper in Horses.

The animal should be placed in a comfortable location, where he can breathe pure air, and be free from annoyance of every kind; should the weather be chilly, the body may be lightly clothed, and the lower part of the limbs bandaged with flannel. It is very important that the surface of the body be kept warm, for when cold, the equilibrium of the circulation is disturbed, the blood then localizes itself about the internal organs, and produces congestion; a condition very unfavorable, in view of the speedy restoration of the sick creature.

It should be understood by every husbandman that this affection is of a prostrating nature, that the object in the treatment of the malady is to husband the animal powers—*keep the horse alive while the disease runs its course*—and preserve the tone of the system by administering tonics and diffusible stimulants; a few doses of golden seal and ginger, accompanied by a rational allowance of scalded oats, small quantities of hay, and water enough, are generally all that is needed by way of treatment. And if this course be pursued the animal will recover, very little the worse for having had the distemper. A mild form of this disease is often made to assume a typhoid or putrid type simply from meddlesome medication and overdosing with agents which depress the vital powers, and by bleeding.

No matter what may be the stage in which we find the disease, the treatment must be life-sustaining; no kind of treatment which contemplates a depression of vitality is at all admissible—this is my experience after a practice of very many years—and the most intelligent and liberal-minded physicians of the present day depend more on *nature* than art, in the treatment of distemper.

Should swellings appear under the chest and limbs, the proposed plan of treatment is not to be materially altered, only add to the golden seal and ginger a little iodide of potass, this agent is a glandular stimulant, and augments the function of the absorbents which take up the fluid and thus reduce the swellings, which are of a dropsical character. The proportions of the above agents are as follows:

Golden Seal,	powdered,	2 ounces.
Ginger,	"	1 ounce.
Iodide of Potass,	"	3 drachms.

Mix, and divide into twelve parts, and give one night and morning in food or gruel.

It may happen that the animal is unable to swallow, in consequence of soreness of throat, as the saying is; in such a case we merely apply some stimulating application to the region of the throat, and wait awhile; soon the soreness subsides and the patient can then swallow all he needs and as much as nature requires.

The best stimulating application for the throat is,

Cod Liver Oil, -	4 ounces.
Tincture of Capsicum,	1 ounce.

Another perhaps equally as good;

Olive Oil, -	6 ounces.
Spirits of Hartshorn,	2 ounces.

A portion of either of the above preparations may be rubbed into the thyroid region twice daily. Under the above mode of treatment I have found that recovery is not only soon accomplished but perfect.—[*American Stock Journal.*

Is In-and-in Breeding Admissible.

Its advocates point, with triumph, to the example of Robert Bakewell, with his Long Horns, and Col. Samuel Jaques, with his Cream Pots; but it should be remembered, that every man is not a Bakewell nor a Jaques; to prove which, it is only necessary to state a well known fact, viz: that after the death of Bakewell, the Dishley Long Horns rapidly degenerated, and have now become extinct; and, since the death of Col. Jaques, the Cream Pots are going the same way. No man has, as yet, been found skillful enough to keep them up to the high standard they attained under the management of their illustrious originators. Charles Colling tried it with the Short Horns, and the fact, that Comet (155), the best bull of his day, was deeply in-and-in bred, would seem to be sufficient evidence that in-and-in breeding was not only admissible, but highly advantageous. But Comet had a deformed shoulder, and he never sired so good an animal as he himself was. Robert Colling bred from Favorite to the sixth generation. But Favorite is represented as a bull of great size and substance, and rather coarse. For this reason, it was desirable to give his stock more firmness of form than he himself had, and in-and-in breeding would have this effect. His great substance and stamina would admit of it, while at the same time the produce of an animal, with less substance and vigor, would have been utterly ruined. The Rev. Henry Berry tried it with good success, for a while, but many of his animals became entirely impotent, and he was obliged to throw in a strong cross to remedy the evil. Thomas Bates bred his Dutchess tribe strictly among themselves for twenty years; and obtained what he most desired, viz. great uniformity. But many of his best heifers were hopelessly barren, and he was obliged, much against his will, to resort to a new strain of blood, which he obtained in Belvidere, whom he purchased of Mr. Stephenson. As a result of this cross, his animals received new vigor, while at the same time their peculiar firmness and style was retained.

The editor of the *Albany Cultivator*, writing on this same subject, quotes the following remarks from Mr. Berry: "Close breeding impairs the constitution and affects the procreative powers. In in-and-in breeding I believe that the generative power fails *first* or *chiefly* on the part of the male." The editor has the following remarks in regard to the stock of Mr. Robinson: "Mr. Robinson purchased a stock of pure Short Horns for his estate in Scotland, and pursued strictly the course of in-and-in breeding; the consequence was, his cattle soon became feeble and delicate, very bad breeders, and many died of consumption; by resorting to Mr. Colling's stock and the use of one of his bulls for a few years, his stock was renovated and assumed their former beauty and vigor."

Mr. Stephens in the *Farmer's Guide*, has some remarks on this subject so much to the point that I copy them entire: "The immediate effects of breeding in-and-in, or employing animals nearly allied by blood to propagate their kind, are remarkable. The bone becomes very small, of condensed texture, and fine quality. The skin is so thin as to receive the appellation of *papery*; so open of texture as to be sensible to the least change of temperature; and hence animals bred in-and-in are very susceptible of catarrhal affections, and on which account are liable to consumption. The carcass is much reduced in size, and the disposition to fatten increases to such a degree that the animal may be said to be always in a condition to be slaughtered. The hair is short, smooth, and thin set, and the wool short thin-set, and watery; and both hide and fleece lose a large proportion of weight. The body assumes a change of form, the barrel being beautifully rounded, but seems stuffed, as it were, within the skin. The extremities are very fine, the head and hoofs small, the ears thin and broad, and the head of the sheep is almost bare of hair, of a blue color, very liable to be scalded by the heat of the sun, and attacked by the fly. The neck of both cattle and sheep are thin; and droop with a downward curve between the head to the top of the shoulder. The eyes are often affected with wateriness. Lameness frequently ensues in one of the limbs. The constitution is evidently much weakened." I have seen many animals that were in-and-in bred, and they were either small in size, or deficient in constitution, and these last died prematurely. In one instance, although the animal escaped both of these defects, he had a nervous affection of the eyes. From the above facts, we may infer that in-and-breeding may be pursued, where the animals have great substance and vigor, especially if they are somewhat coarse; or when, as is sometimes the case, the breeder wishes to concentrate some particular strain of blood. But in either case, it must be pursued with great caution, and must not be carried too far. Some of the most successful breeders have adopted the rule of breeding in twice, and then breeding out. Finally, the breeder should not attempt it, unless he is possessed of great skill and judgment. [*American Stock Journal.*

POINTS IN A GOOD HORSE.

In purchasing a good horse, says the *Spirit of the Times*, sight, wind, feet, and limbs must be the uppermost objects of inquiry; for nine horses out of ten are deficient in one of these particulars. First then examine his eyes, and do this before he comes out of the stable; see that they are perfectly clear and transparent, and that the pupils or apple of the eye are exactly alike in size and color. Next examine his pipes; if good and sound on being nipped in the gullet, he will utter a sound like that from a bellows; but if his lungs are touched, and he is broken winded, he will give vent to a dry, husky, short cough; look at his limbs, and in passing your hand down his legs, if you find an unnatural protuberance, or puffiness, or if feeling first one leg then the other, you discover any difference between them, disease, more or less is present; he may not be lame, but he is not clean upon his legs. If he is broad and full between the eyes, he may be depended on as a horse of good sense, and capable of being trained to almost anything. If you want a gentle horse, get one with more or less white upon him, many suppose that the parti-colored horses belonging to circuses, shows, &c., are selected for their oddity; but it is on account of their docility and gentleness, in fact, the the more kindly you treat horses the better you will be treated by them in return.

DRIVING PIGS.

A writer in the *Country Gentleman*, in a most sprightly article on the pig, among other things, has this on "driving a pig:"

Boys generally drive pigs better than men, excepting Irishmen, whose treatment of pigs is a perfect art. An Irishman never seems to drive a pig, but coaxes him along. A little pull one way, and a little pull another, a whistle, a few endearing expressions, and the pig trots comfortably along, giving no trouble "at all, at all." If a pig is very obstinate indeed, and utterly refuses to go where he is wished, the Irishman manages him by putting his nose in the direction that he is intended to take, and then pulling his tail. The result is evident. The pig imagines that he is wanted to come backwards, and therefore with the perversity of his nature, runs forward as fast as he can. This method is chiefly used in getting pigs on board ship where they evince much dislike to the planks on which they are required to walk. The Chinese are said to make use of the tail-pulling process, when they wish their pigs to enter the bamboo cages in which they transport them to market when fat.

FEED FOR HORSES.

We have known horses fed on potatoes and hay, and do well. It makes them too paunchy, if you are after the looks. Some substitute carrots for the potatoes, with a better effect, they say. We have observed a good effect from carrots; especially will colts thrive on them. Corn is used by many. It makes an excellent fattening feed; but the best horsemen avoid it generally, so far as our information goes. Oats is the natural feed for horses, say these men; and the oat is certainly a favorite. Timothy seems the natural accompaniment of oats. There, is however, another important thing, and that is the mode of feeding. It is with the horse—or with brutes in general—as with man; there should be order in feeding. "Keep the rack full;" that is the theory. It is a bad one. Regular meals is what a horse requires—as much as it will eat at a time—no more. The organs of digestion must have rest, in a horse as in a man. We have seen this stated, and we have heard it remarked. We think we can say we have realized the practical benefit.

HIGH FEEDING.

In fattening cattle or sheep, or in keeping milch cows, few farmers appreciate the advantage of high feeding. A large amount of food is required to keep the animal alive, and the milk or flesh and fat which we obtain is derived from the food given *in excess* of this quantity.—If a horse will draw a ton, and the empty wagon weighs 15 cwt., we can only take a load of 5 cwt; but attach another horse and we can then take a load of 25 cwt. In other words, the *effective* power of the two horses is *five times* as much as the one.

It is so in feeding milch cows and in fattening cattle and sheep—it is the few pounds of extra feed that we give them which produces the desired milk and fat. To give only enough food to keep the animals in a stationary condition, when the object is to get them fat, is manifestly absurd, and to give them only a *little* more than is necessary, and thus get only a *little* fat, is also very poor economy, when by a few pounds more food we might *double* or *treble* the amount of fat or milk.

We do not mean to be understood as saying that farmers do not let their fattening cattle and sheep have all the food they will eat. This is not the case. They let them have food enough, but it is not so nutritous as it should be. *We do not feed enough grain.*

We are aware that this will seem strange doctrine to some of our readers in this vicinity, and in the Eastern States, where grain is now so high, and beef, mutton and pork so low. But in truth, this does not affect the question. Hay is quite as high, relatively, as grain, and if it will pay at all to fatten cattle or sheep, it will pay to feed them well. In fact it will not pay to feed them in any other way. We do not say that cattle can be fattened here at a profit. We hardly see how such can be the case, at the present price of beef and grain, but it is useless to attempt to obviate a difficulty by stinting them in their food. If high feeding does not pay, poor feeding certainly will not.—[*Genesee Farmer.*

Abortion in Cows.—B. B. wants to know the cause of his cows slinking their calves. I presume that the cause is among his hay. There is a weed that grows in swampy land that is called "slink-weed," and if a pregnant cow eats one sprig of it after it is dried, it will be sure death to the calf. It frequently grows among the grass in wet lands, but does not grow as large as it does in places where the water stands through the summer; there it will grow two or three feet long, the top bending over, nearly reaching the ground. It is of a reddish color; the stalk as large as a very course rye straw, but it does not grow as large among such grass as is usually cut for fodder.

I presume that if B. B. will examine his hay carefully, he may find some of it. I have known it for more than fifty years, and wherever it grows among grass that is cut for hay, it must be taken out, or not fed to cows in calf. G. W. N.

Cannot our correspondent send us a specimen of this weed? Or if it cannot be found at this time, will he not send a specimen of the green plant, next summer.—[*Boston Cultivator.*

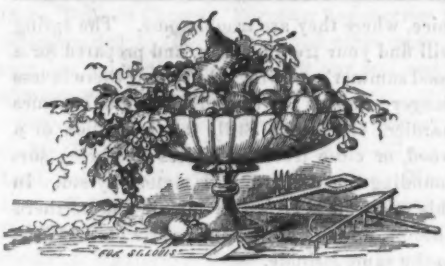
MUTTON TRADE OF NEW YORK.

The following interesting extracts are from the *American Agriculturist:*—

"Few persons are aware of the extent to which sheep are sold in this city. Including those received at the four public market places and those sent directly to the butchers, an average of over 10,000 live sheep per week were slaughtered in this city during the past year. Besides these, there are at least 1,000 dressed carcasses received weekly. If the whole number were driven in at one time, three abreast, allowing four feet of space for each sheep, the line would extend from New York to Albany, a distance of over one hundred and forty-five miles.

Since the commencement of the war, the demand for wool has so greatly increased that farmers are adding largely to their flocks. They find that, with the high prices of wool and the good demand for lamb and mutton, sheep-raising is one of the most profitable branches of farming, and they are now holding back their stock. Prices vary somewhat with the supply, but well-fed sheep, which will weigh 100 lbs. alive, have been selling at $5½ @ $6 per head, for a month past; they are now worth $6½. The rise in wool has added largely to the value of pelts, mixed lots of these selling at $2½ each, and selected pelts at $2¾ each.

In former years the thin ewes have been bought up by farmers for store sheep, at $2½ @ $3 per head. Of late this class has been mostly kept in the country. Those sent to market have been bought up by butchers at $3½ @ $4 each. Contrasting with this class are a limited number of extra large fat sheep, usually sent in about the holidays and sold at high prices. A few have brought as high as $15 @ $20 each. Three full-blooded Leicester sheep, from Canada were recently sold to a butcher of this city for $70. They dressed 471 lbs. The pelts would bring $2¾ each, which would leave the cost of the mutton a little over 12 cents per pound. In view of these figures it is safe to advise the raising of more sheep and fewer dogs."



HORTICULTURAL.

TREE PLANTING.

"In times of war prepare for peace." Peace will certainly come sooner or later. We shall not always have war. Tree planting has been sadly neglected since the commencement of our unfortunate national difficulties. It is time that the planting spirit should again be renewed and intensified. No man ever planted out a good tree without being well recompensed for it. It pays to plant trees whether for fruit or for ornament. The tree planting spirit should more widely prevail. How shade trees and evergreens adorn home! What a benign influence they exert over the family, and especially the rising generation! But too many think money thus expended is wasted. Oh, that they could be undeceived —converted. If the almighty dollar is what they are after, they enhance the value of their places by every dollar they expend in trees, if they are for ornament. How desolate a house looks without a tree or a shrub about it. How delightful it looks, if but a humble cottage, when embowered with trees.

But we wanted to say a word to our readers about planting fruit trees. Now is the time to make your orders for trees. Don't postpone.—By planting early the earth settles around the roots and the tree begins to grow on the first opening of spring. Most people postpone tree planting till all other work is done. It is then late. Many of the trees die. Those which live, make a weak, sickly growth. The trees don't do well, and the nurseryman is blamed. If the trees had been planted a month earlier with the same care he would have been praised.

Is there anything more important than a good orchard. Ought not every farmer to have one? Ought he not to be planting new trees to take the place of the old ones, when they die by disease or old age? Yes: every family should have an abundant supply of fruit. Six years ago we opened a new farm without a fruit tree upon it. Now we have an abundance of apples, pears, peaches, cherries, strawberries, grapes, raspberries, gooseberries, currants, blackberries, &c., and are selling thousands of dollars' worth annually of these fruits. So every one can do, if he will make the effort. It only requires a little earnestness. We repeat—*plant early*. Procure your stock at reliable nurseries; plant and cultivate well, and you will never have any regrets for it.

New York Pippin and Carolina Apples.

Ed. Valley Farmer:—In looking over the discussions on fruits by the members of the Missouri Horticultural Society, and also that of the Illinois Horticultural Society at their last fall meetings, and published in the *Valley Farmer*, I notice that one member, while the apple, known in some sections as the Baltimore Red, came up for examination, pronounced it the same as known in other sections as the New York Pippin, the Ben Davis and the Carolina, and at the Illinois meeting gives Dr. Warder as authority for these synonyms. I know well the history, and introduction of the New York Pippin into the West. It was introduced by Col. Jo. Allen of Breckenridge Co. Ky., from Philadelphia, where he saw it for sale in the street. The woman having it for sale, gave it the name of New York Pippin. From its fine appearance Col. A. bargained with her for some of the grafts, which he took home, and set them in his nursery. The name given was, I presume, accidental, as I have never been able to hear of it under that name by any other authority. It is evidently known in the East as the Baltimore Red, and in some parts of the South and West as the Ben. Davis. The Carolina I have known from its first introduction into Kentucky, twenty-five years ago. It differs as widely, both in its fruit and in the growth of the tree, from the Baltimore Red as any other variety in the catalogue. The Carolina is a large, coarse, tough, hardy apple It looks attractive in market from its red, showy appearance; it also cooks tender. These are the only redeeming traits that can be claimed for it. The tree is peculiar in its growth. The young wood is of a light brown color—while that of the Baltimore Red is of a very dark color. The striking peculiarity of the tree is, that when it attains the size of five or six inches in diameter the outer bark sheds off every year or two in broad flakes similar to that of the Sycamore, leaving the bark beneath clean and smooth and of a light brown color. In habit, the tree is crooked, with broad, spreading, irregular branches. In Georgia and other portions of the South, this apple is known under the name of Nickajack. *Lexington, Ky., Feb.* 1863. H. P. B.

Upland Rice, and Grape Vines from Japan.

Our minister to Japan, the Hon. Robert H. Pruyn, has obtained from the Japan Government twenty boxes containing 100 pounds each of upland rice; eighteen boxes of which are designed for the Department at Washington for distribution the coming spring, and two boxes are to be left at San Francisco, California, for trial in that State.

The climate of Japan, where this rice grows, is similar to that of Ohio, Indiana, Illinois, Missouri and the States adjoining on the south, and it is hoped and believed that it will flourish equally well in those States, adding a very important staple crop to our country.

Mr. Pruyn, and also Mr. Thomas Hogg, who accompanied Mr. P. to Japan, have also each forwarded to our Government some packages of grape vines native to that country, the fruit of which is said to be of a superior quality. A portion of these are also to be tried in California.—These articles are to come by the way of San Francisco, and will be forwarded across the Isthmus by express. We hope they may both prove valuable acquisitions to this country.

FRUIT ON THE PRAIRIES.

The difficulty is in the changes of winter. The frost is severe. The sun warms the trees, so that the tender life is started, for the frost in a few days to nip it. This is the great difficulty in the West, particularly on the prairies. Especially is it so with young trees, or trees of rapid growth. The cold winds that rake the prairies in winter are destructive to trees. Shelter them then, is the first law. This can be done; this is done, and successfully. Trees are of the first necessity. It matters not if it be but a copse or low grove, so that it breaks the strong winds. Trim the trees downwards, low tops are a protection. It is impossible to raise fruit successfully on the most exposed parts of the prairies. Artificial protection must be resorted to. An orchard planted close, affords a protection in itself to some extent.

The difficulty, however, is with young trees, especially when transplanted. If brought from the East, and set out in the fall, the cold winds of the prairies will generally kill them. The best way is to cover them, say with corn-stalks or straw. The corn-stalks have been used successfully. This breaks the wind, and gathers some warmth, sufficient to bring them on a par with the eastern climate. Raise a mound of a foot in height, as a preventive against field mice, where they are troublesome. The spring will find your trees healthy, and prepared for a good summer's growth. After that there is less danger; and as the tree advances and becomes hardier, still less. Still, the protection of a wood, or close trees (fruit trees or others), surrounding the orchard, will materially aid. In this way fruit is grown in middle and northern Illinois, and in many other parts of the West in the same latitude.

Missouri State Horticultural Society.

At the last January meeting of this Society, the following lists of fruit were adopted for general cultivation:

Apples—Early Harvest, Red June, Red Astrachan, Hightop Sweet, Maiden's Blush, Fall Queen, Rambo, Pennsylvania Red Streak (or Wine), Fallawalden, Rome Beauty, Pryor's Red, Michael Henry Pippin, Newtown Pippin (on limestone soil with good cultivation), New York Pippin, Smith's Cider, Wine Sap, Rawles' Janet, Willow Twig, Gilpin.

Peaches—Troth's Early, Large Early York, Crawford's Early, Bergen's Yellow, Old Mixon Free, President, Newington Cling, Magnum Bonum, Stump the World, Washington Cling, Crawford's Late, Columbia, Heath Free, Heath Cling, Smock's Free. These are given as nearly as possible in the order of their ripening.

Pears—Doyenne d'Ete, dwarf; Madaleine, standard; Tyson, dwarf; Dearborn's Seedling, dwarf; Bartlett, standard only; Louise Bonne de Jersey, dwarf; Des Nonnes, dwarf; White Doyenne, dwarf or standard; Duchess d'Angouleme, dwarf; Belle Lucrative, dwarf; Seckel, standard; Buffum, standard; Swan's Orange, dwarf; Beurre d'Anjou, dwarf; Flemish Beauty, standard; Beurre Bosc, standard only; Glout Morceau, dwarf; Winter Nelis, standard; Easter Buerre, dwarf or standard. Promising Well—Beurre Clairgau, Napoleon, Howell, Lawrence.

Grapes—For table and market—Concord, Delaware, Hartford Prolific, Herbemont, Catawba. For wine—Norton's Virginia, Herbemont, Catawba, Delaware, Concord, Clinton.—Promising well—Meade's Seedling. Lists of Grapes reported by Committee the same as the above for table, market and wine. Promising well for table and market—Creveling, Cuyahoga, Clara, Blood's Black, Mary Ann or North Carolina Seedling. Promising well for wine—Cunningham, Cassady, Miner's Seedling, Clinton, Diana.

Cherries—Early Richmond, Morello, May

Duke, Belle de Choisy. For other fine cherries, recommended by Dr. Warder and other members, but not extensively tried in our soil and climate, see discussions.

Strawberries—Recommended to the Society by Mr. Knox, Pittsburgh, Pa.: Early—Jenny Lind, Baltimore Scarlet, Burr's New Pine. Medium—Triomphe de Gand, Wilson's Albany, Fillmore, British Queen, Brighton Pine, Cutter's Seedling, MacAvoy's Superior, Moyamensing, Scott's Seedling, Vicomptesse Hericart de Thury, Duc de Brabant, Golden Seeded. Late—Trollope's Victoria, Kitley's Goliath, Nimrod.

List of Sweet Apples—In succession, those for stock and those for dessert marked T; for baking, B; arranged by Dr. Warder for the Society:

Summer and Fall—B, High-top Sweet; T, Sweet Bough; B, Golden Sweeting; B T, Victuals and Drink, Jersey Sweet; B T, Bailey's Sweet; B, Lyman's Pumpkin; T B, Ramsdel's, Fenton's; T, Dr. Watson, Molasses; B. T, Fall Queen; B, Buckingham. Winter—Tulpahocken, Michael Henry; T B, Broadwell, Sweet Belleflower; B, London Sweet Pippin; T B, Winter Sweet Paradise; B, Ladies' Sweeting; B, Talman's, Holton's Moore's, Gilpin, Campfield; Sweet Vandervere; T, Black Gilliflower; T, Red Winter Pearmain; T B, Swaar.

Cherries—Recommended to the Society by Dr. Warder, as worthy of extended trial: Gov. Wood, Cleveland, Black Tartarian, Belle de Choisy, Belle Magnifique, Elton, Early May, Yellow Spanish.

Apples this Winter.—Thus far apples have been a success. We have never known a winter as favorable as the present. It may be different in other parts of the country. Our apples were carefully picked and put in an out-building. They were picked the 14th of October—rather early, take one season with another. But this year they ripened earlier, and had an excellent growth.

We retained them in the out-building, till the first of December, till the frost threatened. During this time there was considerable mild weather, which hastened the ripening—and that to such an extent that our Spitzenbergs were in a condition to use. We then removed them into the cellar, where they have been till now, January 27th. The cellar was uniformly cold—from two to ten degrees above zero. The apples have improved some, and are now perfect—good as long as the cold lasts. F.G.

GRAPE CULTURE.

Some of our New England agriculturists have had a discussion on grape culture. They have come to the sensible conclusion that neither a rich nor a poor soil is suitable for the grape. A soil that will produce forty bushels of corn to the acre, is a fair, good soil—and this is recommended as the soil for grapes. When the ground is highly manured, there will be a rapid and rather unnatural (at least unusual) growth, which leaves the wood unripe and tender. We see it in the thrifty scions on apple and other trees. The frost, it will be seen, will readily do its work here. If not—as is the case when well protected and saved from the frost—there is not that healthy naturalness which we find in the well-bearing vines. Too much manure, especially nitrogenous manures, will injure and rot the roots. As to the amount of grapes, as well as the quality, pruning has much to do. It is a term that belongs to the history of the grape, and has a very important bearing on its culture. "In our own culture of the grape," says the *New England Farmer*, "we have succeeded best by training a single plant to a stake six feet out of the ground, pruning severely in November, and leaving only two buds on the side spurs—then when the new wood is thrown out and two bunches of grapes have set, to cut off the shoots which grow out, leaving only one vigorous leaf beyond the fruit. This practice is pursued all summer, until the fruit has ripened, and secures on each vine some ten to twenty pounds of large, well ripened and delicious grapes."

Pruning is an unnatural operation, that is, "nature never prunes," I have heard it remarked. It is very true, nature never prunes, but let alone she never grows many grapes. If you wish grapes, and not wood, you must grow unnaturally, i. e., divert the growth into the fruit rather than the foliage. Improvement in fruit means, always, a change from the normal or natural. The wild fruits, of which the domestic are the improvement, are worthless, insipid, diminutive. And yet it is natural to grow a large or improved fruit, because nature does the work, you aiding. Here, then, comes in the noble skill of man—not in directing, but aiding nature. The grape is one of the fruits of the earth which may be greatly improved; and pruning is the main thing—yes, we say the main thing—it always has been so. It is not in the soil—as a moderate soil will do—and, if naturally and moderately rich, is just the thing. This will give healthy and well-flavored grapes,

and not an unnatural, i. e., an injurious growth. Then, the season has something to do with it; the frost much. The latter is somewhat guarded by an early but moderate growth. Of course we do not mean a stunted growth; we mean avoid extremes—and then prune.

The grape is a healthful, grateful, fair fruit. It requires but a common soil, and little attention. It is particularly appropriate for fair hands to prune the vine. Let us grow more grapes. F. G.

GRAPE VINE FENCES.

In a private letter from our friend, Dr. Schroeder, of Bloomington, Illinois, the celebrated grape cultivator, he says; "The best living fence is made of grape vines. Prepare your soil and plant your grape vine cuttings six inches apart on the line of the intended fence. Cut back next fall to one or two eyes. The succeeding fall thin out the plants to one foot apart, and cut back to fifteen inches, and the third year you begin to fix your fence like wire work. The fourth year raise three feet more of the vine and braid it together as you did the third year, and your fence is done. Grapes must be gathered when ripe. Be sure to have barrels enough for the wine. Have a machine made to trim the fence every fall, and trim in summer in June and August. This kind of a fence will pay, give one pleasure and every man wants it."

The Doctor in speaking of the White Willow, says: "The White Willow humbug is going on largely; peddlers of it are running all over the country. All the swamps of Illinois are cleared of the "celebrated Willow" for fencing! America! humbug is thy name! I hoped that the Holy Ashes which I did present at our State Horticultural meeting at Bloomington would throw cold water on the matter, but I see it did not."

[Written for the Valley Farmer.]

TRANSPLANTING TREES.

I have been planting trees every year for six years, and I think Mr. H. F's. directions are very good except one, and that is the shaking of the tree while planting. I think the shaking injures the small roots. It is much better to use from two to four gallons of water to each tree according to the size of the tree and the state of the ground. In my opinion, to plant a tree right, the hole should be at least twice as large as the roots of the tree. Then form a mound in the centre just high enough so that the tree will stand just as deep as when growing in the nursery. Have your dirt finely pulverized, and sift in carefully till the roots are all covered, then pour on the water to wash the dirt down among the roots. When it is settled, finish the filling up, and if the dirt is quite dry press it a little with the foot. I have not lost one apple or cherry tree since I adopted the above plan. I have thirty of the latter—twenty dwarfs and ten standards. Out of fifty dwarf pears planted last spring, I did not lose one. Out of one hundred and ten standard pears I have lost ten.

As for the time of planting I do not think it makes much difference; the main thing is to have the ground in good order, and the planting well done, and if done in the fall, mulching is indispensable, as without it some winters would heave the trees clear out of the ground. I have planted from the third of November to the twenty-sixth of April. I planted thirty small two year old trees of the Baltimore Red [New York Pippin—*Ed.*] sent me from a nursery near Sandoval, on the twenty-sixth of last April, and some of them grew three and four branches over three feet long. C. T. S.

ROBINS DESTROY CURCULIOS.

In New England there is a law favorable to robins. Of late it became the opinion of the Horticultural Society of Massachusetts that the robin was a pest, and that the law should be repealed. The matter was discussed, for the bird had friends in the Society. The result was, a committee was appointed to investigate the habits of the bird, and ascertain the precise food it eats. The result is—as we see in a report through their chairman J. W. P. Jenks, Esq., of Middleboro—that the robin subsists mainly upon curculios. Mr. Jenks reports beetles, spiders, and grasshoppers in the crops of these birds; but nine-tenths of their contents were curculios. It was not unusual to find a hundred of these insects in a single crop; and as high as a hundred and sixty-two were found. This is the robin alone. Are we to suppose that other birds do not aid in this destruction? Spare the birds, then. In the above examination, not a particle of vegetable matter was found in the crops of these birds. This should be sufficient evidence for all farmers; and a law should be passed through the entire country in favor of birds, particularly the robin. There is no doubt the robin, and most other birds of our fields, will let alone vegetable food when insects can be obtained; otherwise, cherries, berries, &c., will be resorted to. The Pheba, King-bird, and others are great slaughterers of insects. Should they then be destroyed because they sometimes attack bees? So with the robins. In the case of the curculio alone there is sufficient to favor this bird.

BENEFITTING CLAY SOIL.—If you have clay soil that is rigid and difficult to treat, add lime and sand, and cultivate thoroughly.

RABBITS ON FRUIT TREES.

Ed. Valley Farmer: I have heard for years that rubbing the trees in reach of the rabbits with raw liver was a protection, but never tried it until last December, when finding the rabbits had begun their winter's campaign against my trees, I went to a neighbor's and got a hog's liver and rubbed the trees with it as high as the rabbits could reach, and not a tree has been barked since. Whether a single application made in the fall, will always be a protection all winter is more than I know: at all events it is easy to save a liver, and if it gets partly dried, it can be soaked when needed before applied. And without knowing much about it, I should suppose that liver would injure the trees less than any kind of grease or oil, and being of a sticky nature it stays on quite well; but will wash off in time as all applications should. If on further trial liver shall prove effectual, it is worth remembering, as it is easily and quickly applied, and in reach of all at the season needed. I have tied three or four corn stalks around small trees, the stalks say two feet long—the liver is easiest.

Gray's Summit, Mo. S.

Ed. Valley Farmer: If J. S. W. will examine the *Valley Farmer* for August, 1862, he will find the information sought for and a remedy for the bite or bruise on his apple trees, under the head of the "Farmers' Club of St. Charles."—There is, perhaps, a more simple remedy than mentioned there, and which I have just been practising. Saturate a rag with any old grease and rub it over the trees from the ground to such height as the rabbits cannot reach.

St. Charles, Mo. B. A. Alderson.

Ed. Valley Farmer: I feel indebted to your valuable publication (the *Valley Farmer*) for the preservation of my young apple and peach trees from the ravages of rabbits in winter. I took tobacco stems, as recommended in one of your numbers, and made a strong decoction, and mixed it with quicklime into a thick wash, and applied it to the bodies of the trees as far up as the rabbits could reach. Wrapping the trees with strips of newspaper is also a very good plan. John Barr.

Jefferson Co. Mo. Feb. 10, 1863.

Ed. Valley Farmer:—J. S. W. wants to know how to prevent future loss by the rabbits: Take soft soap and mix water with it until you make it about as thick as molasses, then with a brush coat the body of the tree all over, and it will not only prevent the rabbits from barking them, but will be a great advantage in freeing them from all insects. If there is a great deal of rain it may be necessary to renew it during the winter; but one coat has saved mine so far this winter.

St. Clair Co. Ill. R. A. Moore.

Ed. Valley Farmer:—I see in your Feb. No. some inquiries by J. S. W., who wants to know how to prevent rabbits from biting his apple trees. I will tell my remedy, that is to plant corn in the orchard, and in tending the corn one will tend his apple trees. In the fall, cut the corn and shock it in the orchard, and let it stand all winter.—The rabbits will eat corn instead of apple trees, though it is best to protect young trees till they are three years old with corn stalks, cut eighteen inches high, and stuck around the tree one inch apart, tied at the top, and the rabbits will not hurt the trees.

The best and only remedy for a tree that has been injured by the rabbits, is to bank the dirt around it an inch or two above where it is peeled, and let it stay there till the bark grows over it. I have saved trees that way. If the dirt has to be thrown up very high it may tumble down—set up some boards eighteen inches from the tree in the shape of a box, and drive up some stakes on the outside to hold them to their places.

Greene Co. Ill. M. M.

Ed. Valley Farmer:—I have had a little experience and some observation with regard to rabbits barking fruit trees, but can't say that I can give a sure remedy. We have an orchard five years old, and have not had any damage done by rabbits. The first, second, and third winters, we rubbed the trees with lard as high as we supposed they would be likely to reach—this should be done at least twice each winter—old rancid lard I suppose will do as well as fresh, for rabbits are strict vegetarians, as far as I know: dislike anything greasy or bloody. I have learned by observation that rabbits are very fond of corn, this is one reason why I think they do not disturb our trees, for we have had corn on one or two sides of the orchard every year since the trees were planted, and the corn generally not being gathered till late in the winter, affords them all they wish in the line of grain. One other thing I think has had some influence in keeping them off our trees, and that is red clover, we have had more or less clover growing near the orchard ever since planted; also Timothy and blue-grass. I do not know that rabbits will eat Timothy or blue-grass, but red clover they are very fond of. The last two winters we did not rub our trees with anything, relying entirely on the corn and clover. No damage so far—but I would not advise any one to rely on corn and clover if they want to be sure of saving their trees, especially while young. I think it bad to let weeds grow up in an orchard, for rabbits seek such places to

hide. One of my neighbors had several of his trees badly eaten this winter, he let the weeds grow up among the trees three or four feet high, affording the rabbits a fine hiding place. His trees are eight or nine years old; good size.—Perhaps I should mention the fact that we have plenty of rabbits about our place—no uncommon thing to see half a dozen skipping about the yard and orchard of an evening. We keep no dog or dogs; but I would think it a good plan to keep a good dog, and use a gun occasionally when they become very plenty.

Shelbyville Ill. John Funk.

Ed. Valley Farmer: If J. S. W. will kill a rabbit and cut it in two pieces, and rub the bark of each young tree with it, the rabbit will not trouble his trees any more that season. The hide of the opossom to rub the trees with, the flesh side, is equally as good. I have tried it, and have not had a tree injured that was treated in this manner, while those that were left unrubbed were eaten by the rabbits.

Joseph M. Marvin.

Ed. Valley Farmer: Blood is an effectual, safe, and easy remedy to prevent rabbits from eating the bark off of young trees. My method of applying it is, to take two or three quarts of blood, and thoroughly mix with about six of water in a bucket; then, with a short-handled white-wash brush, put it on. One stroke on each side of the tree is sufficient. One application is enough, without heavy rains occur during the winter, in that case it would be better to go over them a second time. An active man will wash nearly one thousand in a day. I have tried it. Geo. Barry.

APPLE SCIONS.

There is but one principle about scions—keep the sap in them. This is all. He that can do this best, is the most successful. Many methods are resorted to, to do this. Some cut their scions in the fall, and bury them. This will prevent the sap from escaping, as the surrounding air is not dry enough to abstract moisture. To this effect they are laid in some dry material, which itself, will soon become moist. Some keep in the cellar, putting the butts in moist soil, and covering with a box. Some withhold the box.

In selecting scions, care should always be taken to get the finest and healthiest, from healthy, thrifty trees, with buds well developed. Where it can be done, scions may be cut at the time of grafting; but care must be taken not to injure the bark. Let a sharp knife be used, and the work carefully done, and done at once. Cut your scions, and use them immediately.

The Esopus Spitzenberg Apple.

The Fruit Growers' Society of Western New York, at their annual meeting, condemned the Esopus Spitzenberg, as a "tree not healthy and vigorous and in most cases unproductive."—The vote against it was 13 to 8.

The Esopus Spitzenberg, like the Fall Pippin, is a rich, fine flavored fruit, and cannot be expected to bear as prolifically as common fruit.—Yet the fine Esopus Spitzenberg trees we have, bear the average quantity of fruit, and, they bear yearly. This year there was a full crop, and varied but little from others in quantity, while as to flavor there was little diminution—on account probably of the long, favorable growth of the season—all the elements of growth being favorable to production. What dilution took place, took more particularly, it seemed, from the acid—thus making the fruit a milder apple. It never was as good as the present year. Among all the fruit within our reach, we prefer (this winter) this apple as a general eating apple, and for cooking purposes. There is a diminutive form of the Spitzenberg which is always worthless, even in this excellent season.

We regret to see the Society thus decide against this favorite fruit.

The Swaar also is cut off by them. We know to a certainty, that this is not the popular sentiment.

Among the twelve fruits adopted as winter fruit (apples), we are glad to see the Golden Russett unanimously adopted.

But fruit is a matter of taste; and hence the diversity of opinion. It will be only when the popular taste fully understands all the varieties by thorough experience, that a unanimous opinion will be formed. Then (we predict) the Spitzenberg, well protected, well pruned, and well fed, will not be amongst the least recommended.

F.G.

The Adirondac Grape.—This variety originated on the shore of Lake Champlain, Plattsburg, N. Y., and was brought to notice by John W. Bailey of that place. It ripens there usually between the 1st and 15th of September, and is at least one week earlier than any variety yet tested.

Ten days before the Dalawere and Northern Muscadine, and a week before the Hartford Prolific. The fruit adheres to the pedicle, is quite free from pulp, and is said to be very delicious.

The Montreal Horticultural Society, awarded to Mr. Bailey the special medal of the Society, at the Fair (autumn 1861), for this grape, as the best suited to the latitude of Canada.

It makes rather long jointed wood for profitable vineyard culture, but on account of its early ripening, may prove a great acquisition to those sections of the country where the seasons are very short.

[Reported for the Valley Farmer.]

Meramec Horticultural Society.

EUREKA, Feb. 5, 1863.

The fiftieth Monthly Meeting was held in the school house. President Beale in the chair.

The reading of the minutes of the previous Meeting was dispensed with.

One new member was elected.

The Secretary stated that he had now in his possession some cuttings of the "White Willow," the gift of O. B. Galusha, the late President of the Illinois Horticultural Society, and desired those wishing cuttings to give their names. A conversation was had on its merits and its value in aiding the filling up of sloughs and places liable to wash into deep gullies.

Mr. Vaughn said he would like to have the attention of the Society called at this early date to the growth of the sorghum, which was at this time exciting so much attention in Ohio, Indiana, Illinois, and other States, and suggested the importance of early action in reference to the getting suitable machinery and implements in order to the working up of the crop, if planted; and suggested that something be done in a joint stock capacity so as to ensure that if the crop was raised it, could be manufactured, seeing that it was much better to have one set of good implements for the use of all, than each to have an inefficient apparatus of his own, and none to have perfect results.

Dr. L. D. Morse gave notice of motion to amend the Constitution by striking out the word "nine," and inserting the word "seven" in its stead in article 13th. Laid over under the rule till next meeting.

The special order being called—an essay was read by T. R. Allen, upon "The Utility of our Society." After which it was, on motion, "RESOLVED, That the President appoint a committee to see to the printing of the essay." The President appointed Dr. L. D. Morse said committee.

The question for the day being in order, viz: "What is the best apple to plant for market, and the best way to plant it? It was, on motion, "RESOLVED to consider the best three apples to plant for market."

Dr. Morse presented the Nickajack which was upon the table, and was tested by the members present, he brought it up as being new in this region, the samples grew in Kentucky where they did well. While it was not of the finest quality, its fine size, showy appearance, and extraordinary keeping qualities would commend it for trial by cultivators here.

Talman's Sweet—was presented by Dr. McPherson, and tested by the meeting. He thought much of it thus far; fine, rapid growing, neatly-shaped tree; fruit being sweet was much wanted as a winter fruit; a good and regular bearer; in his nursery it was the finest formed of all the trees he had.

T. R. Allen spoke in regard to the fine growth and beautiful form of the tree.

The Secretary referred to its excellent cooking qualities, which enhanced its value in times like these, when sugar was high. Sugar tending to spoil the flavor of the fruit.

Newtown Pippin—T. R. Allen: It is keeping with me better than the Jeneton, and brings a dollar a barrel more than the Jeneton in market.

J. S. Seymour: The Newtown Pippin has another advantage, it hangs well on the tree, is not so liable to drop as most others, and has much less tendency to overbear; there is more money in this apple than any other.

Sec: It seems to suit our soil admirably; it is much grown all round this neighborhood, and does very well; perhaps the soil being limestone on upland, it does better than in some other places, where there are complaints about it.

L. D. Votaw: Two years ago the Jeneton and Newtown Pippin sold at the same price; then the Newtown Pippin got fifty cents above the Jeneton, and this year it is worth a dollar per barrel more.

Dr. L. D. Morse: It may be well to notice that in the meeting of the State Horticultural Society, there were some that said they could not get it to be of any value on prairies, it did not generally do well, but it always did well on limestone soils or with lime as a special manure.

Dr. McPherson: Thinks it has rather too much acid, and for that reason likes the green Newtown Pippin best. The green Newtown Pippin was tasted by the meeting.

Secretary: The Yellow Newtown Pippin makes the best cider he ever tasted.

J. S. Seymour: There was no lime in the soil on which I was raised in the East, and the Newtown Pippin did well.

E. Vaughn: I think we should recommend these apples with caution; five years ago every person planted Jenetons, and hardly anything but Jenetons—every person you asked what to plant, said, "Oh, the Jeneton, to be sure; the Jeneton,"—now there are grave doubts, where five years ago there were none.

Dr. McPherson: At the time Mr. V. refers to, it was only the Jeneton that had been planted to any extent, and that, compared with the seedling fruit of the old settlers, was certainly a fine fruit. At that time I planted out two hundred trees, and planted one hundred and sixty Jenetons, and only four other varieties of ten each. We are now beginning to find out what the merits of other varieties are, and with increased knowledge and experience, our views will change.

T. R. Allen: I notice the Jeneton was placed at the top of the list at the State Meeting.

Dr. L. D. Morse: It is said that a "Wise man changes his mind, a fool never does." The Newtown Pippin does so well here I have no hesitation in placing it on the list.

Dr. McPherson: For my own taste I would place Pryor's Red first on the list, Newtown Pippin second,

Pennsylvania Red Streak—T. R. Allen: I regard this as the best apple of its season, not equal to the Rambo in flavor, but larger and will sell better, keeps till January, comes early into bearing and bears well, and very few poor specimens on the tree.

Yellow Belleflower—L. D. Votaw: I think this far before the Pennsylvania Red Streak.

Dr. L. D. Morse: I prefer the Pennsylvania Red Streak, it is also called the Winter Wine.

Dr. McPherson: The Pennsylvania Red Streak is very popular in Ohio and Kentucky, but it is a mere market apple. I would never eat it where there was a Yellow Belleflower or Rambo. I think highly of the Yellow Belleflower.

T. R. Allen: To eat, I would prefer the Yellow Belleflower; for market I prefer the Pennsylvania Red Streak.

Secretary: The Yellow Belleflower is too tender to carry a long distance to market, and its color shows a bruise very soon.

Dr. Morse: There are very few sound Yellow Belleflowers in market. Those I have found had generally the rot in the heart.

Dr. McPherson: The Yellow Belleflower is one of the best in this locality. But in a small list like this, don't know that I would recommend it, but would name Pryor's Red; it produces as well, and is in quality better than the Newtown Pippin. It should always be planted with the N. Y. Pippin; so you may have good apples to use until the Pippins ripen, which is late in the season.

Dr. L. D. Morse agreed to this.

T. R. Allen: With me it has been long in coming into bearing. I get a peck of Pryor's Red to a bushel of Newtown Pippin from trees planted the same time.

Dr. McPherson: Thinks its slowness in coming into bearing no objection—it will bear the longer and better. The most of the trees I see of the Pryor's Red bear about right—not too full.

E. Vaughn: I was with some families two years ago who raised a considerable variety of apples, and they thought most of Pryor's Red. They have such

a fine flavor, good to eat, fine size and appearance. I am much in favor of them.

Dr. L. D. Morse: I have heard it said by growers that it bears many small and inferior specimens that gives trouble in sorting.

Secretary: In Illinois, Pryor's Red trees stood the severe winter of '55-56, better than any other tree.

It was, on motion, "RESOLVED, To continue the subject at the next meeting."

The President announced the next meeting would be held at the school house, Allenton, on the first Thursday of March, at 10 A. M. On motion the meeting adjourned. WM. MUIR, Sec.

PEARS AND PEAR TREES.

All fruit, when in blossom, should be sheltered—not from the sun or occasional showers—but from the long, cold rains. This, we believe, is generally conceded. It is also conceded that pear trees especially require shelter. The pear, however, is a transient fruit; it will not keep long. It should be picked when nearly ripe; when there is little resistance to the hand of the picker. It should then be kept in as cool a place as possible without freezing. In this way the pear may be kept, carefully collected in boxes or barrels, a long time, slightly undergoing a change, both of color and flavor; each improved. This improvement can be made more rapid by raising the temperature. It is the approach of dissolution that perfects fruit; and heat accomplishes this. So with apples and other fruit; but rapidly with pears.

THE BORER.

This pest of fruit trees may be treated in this way. As the insect is only in the bark, cut away the thin outside shell, and the grub will be found at the end of the burrow. Dr. Potter has saved a very fine orchard in this way. Of course the tree is affected, but not by any means killed. Remove some of the branches immediately after the insect is removed, for the tree has lost some of its vitality, though it may still be a good tree.

One of my own trees, having been ripped from root to branch, exposing one whole side, more than half of the stem being dry, dead wood, I proceeded at once to lop off some of the branches. This I followed up for several years, pruning each alternate year, as a yearly strain would be too severe. The result is, the tree has but one branch, the central one left.

The bole is very large, the top that of a young tree, and the fruit is the best in the orchard—large, clean, and a yearly crop, so that, although appearing unique, out of proportion, the club tree is the pet of the orchard. It furnishes about a barrel of apples a year. Few trees, however, are as badly injured as this and live. F. G.

Red Clover for Orchards.

John Townly, in the Transactions of the Wisconsin Agricultural Society, has this remark: The orchard which has produced most fruit in this town was sown with red clover two years after planting, and has not been plowed since. The soil is naturally rich, the trees are favorably situated as to shelter, and a space round each tree is worked, and manure has been applied.

He says the soil is naturally rich. This sums it up. In all soils, if not naturally rich, the soil must not only be made; but it must be made deep. There must be rich soil where the roots are—and that is deep in the ground—deeper than the clover extends, or rich enough to defy the abstraction of the strength of the soil. Make your soil rich enough throughout, and the tree is sure to grow, however many other mouths may be sipping at it. The tree is the first great sipper, and will luxuriate in rich soil—always deep, rich. In old trees, we know, by a thorough experience, there is no lack of a thorough growth, and full bearing. In the case of young trees, in a poor soil, we presume clover interferes with the growth, and probably with the bearing. But we should be very careful in noting all the facts. There is much failure with most trees recently. We should not jump at conclusions. The location of a tree has an effect, a great effect in bearing. Cold rains, long continued, are hurtful to blossoms—when sheltered, less so. In low places there is less success than on elevated grounds, providing always there is shelter where that is needed. Clover has thrived in our orchard—two crops a year—for many years—and no orchard has yet taken the palm from it, either in bearing, or in healthy growth. There is no healthier, fuller, fairer fruit, nor better flavored. The soil is rich deep down, and loose enough for the roots to work. Rich ground first; shelter second; and care throughout. This secures fruit, if secured at all, and independent of minor things.

AFFECTED APPLES.—The apples we have used thus far, have had, on an average, less than half a dozen rotten ones to the barrel. Where an apple has been bruised, the bruise has dried up, forming a tough, sponge-like substance, and not affecting in the least the rest of the apple. Now and then we find a spot, at first a mere speck of rot, occurring in the solid part o the fruit, which it is hard to account for. We have apples affected in this way which have also been bruised, the bruise dried, as above stated. By this it seems rot may be independent of other hurt to the apple. Injury undoubtedly invites it, and hastens it. But we have evidence undeniable, that it is not the predisposing cause of rot necessarily. That, we have evidence, occurs without it. Heat and humidity are the agents of rot. Avoid these, and we are generally pretty safe—which may be done by cold cellars.

CLIMATE.

The "Sunny South" is a term that expresses more than mere poetry. It means that the sun dispenses with much labor which the rigors of winter necessitate. We of the North and West must provide for winter. Our woolens, our furs, must be provided; shelter for cattle—for man and beast. But most of all, an almost untold amount of labor must be expended in "wintering" our stock—not only to turn the straw-cutter, and feed, but—and this is the most important point—you must cut, and cure, and gather your hay—and that in the most precious time of the year—in mid-summer. The South is exempt from all this. Here is a startling fact in favor of the "sunny clime." But, nature has a compensation for every loss. Why do we find our southern citizens frequenting our northern watering-places and woods in summer? Why are the people of the South languid, indolent? For the same reason that the people of the North are healthy and sanguine. Amid all the rigors of winter, there is no better poetry than its brilliant stars and moon-lit evenings; its sleigh rides and skatings; and in-door enjoyments. The jingling of bells, furry robes, red cheeks, clear laughter, and crisp snow. There is the in-door light and festivity. There is even fragrance, the fragrance of flowers, but this is exotic, foreign; it belongs not to winter. That has the clear, frosty ring, and nakedness without—the nakedness of the Arctic, bringing up polar associations. There is comfort in winter. And no summer is so fine as a Northern summer; no brooks are so bright nor so cool. So that the Creator has had benefit in view in all this variety; and each one is satisfied, satisfied with his condition, even the hutted Esquimau, who would not exchange his barren fields for all the luxury of the South. Where one's home is, is one's happiness. The Scotlander, when he came to America, mourned that his heather would not grow; he would make a Scotland here—a barren Highland. F. G.

A SHORT ESSAY ON FEELING.

Feeling is dangerous. It should always be watched; yet how seldom is it. How we are carried away by emotion, passion, prejudice, hatred, envy, and how many other varieties of feeling. We do what we love to do; we abuse a man when we get angry with him. How often we repent of deeds that have been done under excitement. Yet the very next occasion we do the same thing. Half of the voters of the nation are looking one way; the other half in an opposite direction. All from a feeling (political) which each harbors. You talk with one party, and it is right; you talk with the other and it is right. And they are both sincere. This is because they are both influenced by feeling—this feeling blinding their vision so that they cannot see the truth. The secret is, judgment is swayed by feeling. We may love a man, and afterwards hate him. The man may be the same, but our feelings are different, and we view him different; it is the feeling that makes that difference. England is opposed to Napoleon (the first). America in his favor—all from a matter of prejudice. There are different views—because different feelings. Hence feeling prevents us from seeing aright. But, nevertheless, we indulge in it, because it is a pleasure to do so. This is the secret, we are gratified. Anger abuses because it gratifies. So with love. The wise man controls his feelings; the unwise not.

HOOPING COUGH.

At this season of the year hooping cough more or less makes its appearence in parts of a large city like this, and many people are at very great efforts to keep their children out of its reach. If one-half the paine were taken to carry them successfully and wisely though it, that there are to prevent the infection of it reaching them, it would no doubt be found that in a great majority of cases the hooping cough is the means of conferring an actual constitutional benefit, so that the child will come out of it stronger and better in health, and with more fully developed lungs than before it was attacked. Even as it is, the benefit to a family is on the average much greater than the danger. Not above one in twenty are supposed usually to die of this desease. It may, however, be doubted if one ever dies of the hooping cough, except by its producing some other secondary affection, not a necessary part of it, but to which there has been some constitutional tendency, or which is the result of carelessness or accident. In most of these cases fatal disease either would have ensued without or might have been averted. The disease itself seems to

produce no necessary effect upon the lungs at all traceable in dissection. The coughing may and generally does produce more or less inflammation, and this in turn mucus, and all these things put together may in weakly children, or where the symptoms are neglected, produce a great number of ultimate evil consequences. But the cough itself is strictly a spasmodic cough arising from a convulsion of the nervous system, as decidedly as laughing or crying, and it is not, like most coughs, a convulsion caused by some inflammation producing irritating effects, though often causing it. It is a disease, therefore, throughout all its three stages, whose bark is worse than its bite, if properly watched. Indeed it is only astonishing the amount of suffering a child will go through from its paroxysms one minute, and except fatigue, be perfectly free from pain and all inflammatory symptoms the next. Many children are even observed to have a better appetite and finer spirits and general health, even nearly all the time that the hooping cough is upon them, than at any period of their lives.

Of course the strain of these paroxysms of itself, apart from all the expectoration, makes a heavy draft upon the constitution, and hence when the child is weakly or debilitated by other sickness, care should be taken to avoid exposure to it. Young infants, not knowing how to expectorate, should be kept from the contagion. It is also preferable not to have children take it in the fall, as it is apt to affect them all winter. But beyond that there is no reason for taking pains to avoid it, where children are of a proper age and in good health. On the contrary, it is to be allowed to pass through the family, not as a disease so much as something sent probably to produce a higher development of health than could be attained without it.—Whether it is that it takes from the system a certain lymphatic or other peculiarity which, though desirable up to a certain stage, it is now equally desirable to expel from the system—or whether it is simply through the expansion of the lungs, occasioned by coughing: certain it is that it often produces a marked constitutional improvement. If any person, child or adult, will but take a quill and draw a deep, full inspiration, so as slowly to expand the lungs to the utmost, and repeat this for five minutes daily, the chest will soon measure four or five inches more in circumference, and in proportion to the greater amount of oxygen thus inhaled, the lungs will be kept freer from disease, the amount of food digested will be increased, and the vital energy, the real being and living power of the individual, will be augmented. Hooping cough, therefore, should be looked forward to, when it comes into a family, as a messenger sent indeed to make fresh demands upon parental care and watchfulness of every symptom, but sent also to prepare and as it were compel the child to expand its lungs afresh and on a larger scale, on entering on a new period of its existence, just as the cries of its earliest infancy are designed to give expansion to its lungs at first.—*Philadelphia Ledger.*

TASTE.

Not the taste for victuals: we seldom lack here—though there is much difference even in a natural taste, as we all know. But this is not the taste we are after. There is a taste a little higher—higher up than the tongue. It is one that has a greater influence, we were going to say, than the lower organ, and the still lower relish. But this we fear is not the case. We are too much allied to the animal. But there is a mental taste, more or less, belonging to all people. This is necessarily so. We could not enjoy the lower without the aid of the other. It is then a necessity; and as such we are to see that it be properly cultivated—for much depends upon our mental relish. Society is formed by taste. The various tastes select, and we have the various states of society, each according to its taste. A man will be known, not only by his taste, but by his society; the two always go together.

But how are we to cultivate our taste? By having to do with those things that are in better taste. Associate with men above you, and you will be drawn to them. Read the best books, and your taste will be formed on their model. As we do, so we become, if we persist. Hence, we love trifling things at first; then more important; and so on till we become elevated—till the man is on the pinnacle. But a boy may continue to trifle, and so never get away from boyhood, though grown up. We have seen many men that are boys yet. We have seen some boys that are men. They early learned, and were apt. We are not all apt. But we have sufficient ability to improve—and that constantly—and thus in the long run we will reach the goal. As our associations are, so are we; so we remain.

To love is to border close on hate. Jealousy is the shadow that accompanies love.

Backbiting is the worst kind of biting.

HUMAN VEGETATION.

The power of vegetation seems to be almost universal and perpetual. The stone taken fresh from the quarry soon becomes covered with grey lichen and green moss; and the very bread that we use becomes coated with vegetable floss when exposed for a few days in a warm damp atmosphere. Not only the face of the earth, but every object upon its surface, seems instinct with vegetable life. In some situations it springs up so suddenly and unexpectedly that many persons suppose it to be endowed with spontaneity. In its growth and development, its domain is not confined to inanimate creation, but it is also extended over animal life. Bees may frequently be seen flying with plants, nearly as large as themselves, protruding from their heads; silk worms are sometimes affected with a vegetable moldiness called muscardine, and gold fish may oftentimes be seen covered with a white vegetable mold. Insects, reptiles, fowls, fishes, and animals of the higher grades are subject to parasitic vegetation; and man himself is not exempt from the same influences. The scald head, the ring-worm, and dandruff are vegetable growths. Some forms of it attack the children of the poor almost exclusively, where sufficient attention is not paid to cleanliness; while other forms of it occur at all ages and are found in all ranks and conditions of society. The vegetable growth of scald head is described in the Bible (13th chapter of Leviticus), and is one of the unclean diseases of the Hebrews. It appears in patches of yellow scales; the hair becomes dry and brittle, and disorganized. Examined with the microscope, the scales are found to contain masses of seeds. A very formidable type of this disease occurs frequently in Poland, and is called *plicapolonica*.

The parasitic plant which causes diseases of the human scalp is called *acarion schonleinii*, and is the frequent cause of baldness. It has been noticed that baldness is almost unknown among a barbarous people. American Indians, Africans, Malays, and Chinese have all bushy heads; and it is asserted by the Rev. H. Macmillan, F. R. S., in an essay on this subject in *Macmillan's Magazine*, that baldness was unknown among the primitive inhabitants of the British Isles. Baldness has increased with civilization, but whether owing to increased intellectual activity, or vegetable parasites developed under favorable conditions from modern habits, is not a settled question.

There is also a special hair-plant called the chinwelk, which revels in the beard. It is distinguished by a red eruption of tubercules of various sizes, and it frequently destroys the hair. It was very common among the Jews of old, who, according to the Levitical law, enforced very arbitrary measures for its extirpation. Where long hair is much prized in the East, the common salutation is "May your shadow never be less, and the hairs of your head never decrease!"

There is a singular vegetable growth peculiar to the human body which has a predilection for those parts which are habitually covered with clothing. It is called *microsporon furfur*, and consists of an efflorescence of small circular spots, which gradually coalesce and produce irregular patches, accompanied with dry scales, which are constantly renewed. These scales, when examined with a microscope, are found to contain oval seeds, tubes and knots, similar to those of miniature bamboo canes. This vegetable parasite is very common and occurs at all ages and on both sexes.

The diseases called the yaws, which is common in the West Indies; and the elephantiasis, which disfigures the Egyptians, are vegetable growths. It is also well known that in hospitals, especially during warm weather, white flocculent filaments are found on removing the bandages from wounds and sores. These are developed with wonderful rapidity in a very few hours, and are vegetable formations called mycoderms, which are similar to the spawn of mushrooms.

Vegetable growths are sometimes found in several of the internal parts of the human system, such as parasites on the teeth, and the thrush or whitish crust which frequently lines the membrane of the mouth and throat of infant children. The same vegetable growth is common with persons in the advanced stages of pulmonary consumption.

It has been proved that all these vegetable growths are due to seeds, most of which are so minute as to be almost invisible to the naked eye. They float in the atmosphere everywhere; dance in the air-currents of every house; and they but await the proper conditions for their development wherever they alight. It is easy to account for parasitic affections of vegetable origin being highly contagious. Malaria fevers may be of cryptogamic origin, due to the diffusion of the seeds of these plants in the atmosphere. Several physicians have entertained such views. Formations closely resembling them have been found in the blood and kidneys of persons affected with typhus, and probably there is some connection between such plants and most epidemic diseases.

THE NERVOUS MAN.

A nervous man sees things in a wrong light. It is wonderful how little things affect him. The smallest ailments are incurable diseases. He is apt to magnify everything—the good as well as the evil; but more particularly the evil. This is because their nervous (morbid) condition is evil. This perversion of the understanding is a mystery—for it distorts—not only obscures. A dyspeptic man, therefore, is constantly in danger of falling into error, and committing rash acts, to be regretted afterward. A rent in his coat is a serious thing. The loss of a cow will send him to the poor house. He has all diseases before he dies; a pimple is a cancer; a cough, consumption; sore throat, diptheria. He is suspicious of everybody. He is a burden to himself, and generally to others. We pity the nervous man, for he is really a subject of commiseration. And he is not easily cured.

CINCHONA—QUININE.

The cinchona or Peruvian bark is obtained from shrubs and trees in South America, and it is one of the most important medicines in use for intermittent fevers and agues.

The genus cinchona belong to the same natural order (*Cinchonaceæ*) which embraces the coffee plant. The plants of this genus are natives of the inter-tropical valleys of the Andes, and are found principally on the eastern face of the Cordilleras, growing commonly at heights varying from about 4,000 to nearly 12,000 feet above the level of the sea. The cinchona region extends from Santa Cruz de la Sierra, in Bolivia, through Peru and Columbia, nearly to Carracas. The plants exist both as small shrubs and as large forest trees, with evergreen leaves and commonly showy flowers. They require great moisture, and a mean temperature of about 62°. The most important varieties of it are crown bark, silver bark, yellow bark and red bark.—The name cinchona was given to the genus by Linnæus, in compliment to the Countess of Cinchon, whose husband was the Viceroy of Peru. She had derived great benefit from the bark during her residence in South America, and on her return to Europe, in 1639, she brought with her several specimens. The medicinal use of the bark was first made known in Europe by the Jesuits.

Whole forests of the cinchona have been destroyed to obtain the bark, without their places being attempted to be supplied, and fears have been entertained that it would soon be exterminated. Acting upon this idea, some English capitalists nave lately began to cultivate it in the Neilgherry hills, in the East Indies. Several plantations of it have been laid out, and 72,500 plants have been placed in them. Peruvian bark was used in a state of powder for medicine—chiefly as a tonic—till 1820, when Pelletier, a French chemist, obtained from it the stimulating principle with sulphuric acid, forming a salt called the sulphate of quinine, in which condition it is now used. Eight grains of the sulphate of quinine produces an effect upon the human system equal to one ounce of the bark. Quinia wine is chiefly used in Italy for fever and ague, it consists of a mixture of the sulphate of quinine with weak wine.

LUXURY.—"Luxury is the bane of intellectual as well as corporeal perfection." Is this true? Is there a mental luxury? If so, there is a mental wrong; for luxury, in its very nature, tends that way. Yes, there is mental luxury. We are apt to indulge in wayward, reckless thought? Indeed, what latitude do we not give to thought. The mind is forever on the wing, exploring everything within its reach, and particularly fond of the forbidden. Here it luxuriates. And this indulgence is said to be baneful. Hence, the necessity of "disciplining the mind."

Many a man derives all his firmness and strength from his wife; she is not only his rib but his backbone.

A precocious young man, blessed with the name of Isaac, says that 'if he is drafted, Abraham will be offering up Isaac as a sacrifice.'

Now that the grog ration is abolished, sailors will not be likely to enter upon their duties with much *spirit*.

A lively Hibernian exclaimed, at a party where Theodore Hook shone as the evening star: 'Och, Master Theodore, but you are the *hook* that nobody can *bate*.'

The steward of one of the European steamers at Boston, who wanted to take a box ashore unobserved, said to a Custom House officer whom he knew, 'If I was to put a half eagle piece upon each of your eyes could you see?' The answer was—'No, and if I had another in my mouth I could not speak.'

An old gentleman of eighty-four having taken to the altar a young damsel of sixteen, the clergyman said to him: 'You will find the font at the opposite end of the church.' 'What do I want with the font?' asked the old gentleman. 'Really, I beg your pardon,' said the clerical wit: 'I thought you had brought the child to be christened.' The bridegroom was somewhat miffed at the parson's allusion, but finally concluded to allow him to perform the ceremony.

SUGAR AS FOOD.—In the last number of the *British and Foreign Medical Review* there is an interesting paper on "Sugar as Food and as a Product of the Organism." In alluding to the uses of sugar in assisting assimilation, the reviewer quotes Mr. Bridges Adams, who says:—"I know by experience the difference in nutritious effect produced by the flesh of tired cattle on a march, and those slain in a condition arising from abundant food and healthy exercise. In the former case any amount might be eaten without the satisfaction of hunger, whilst in the latter a smaller amount removed hunger. But I discovered that certain other food of a different quality, such as grape-sugar and fruit, would help the tired meat to assimilate, and thus remove hunger." Puddings and fruit tarts, are not, therefore, simple flatteries of the palate, but digestive agents; provided always they are not themselves of rebelliously indigestible materials, which, in English cookery, is too frequently the case. The reviewer alludes to the fondness of artizans for confectionary, and of patients just discharged from the hospital asking for "sweets," in preference to good substantial food, as examples of a correct instinct. There is no doubt that in children, in whom the requirements of growth call for a rapid and efficient transformation of food into tissue, the demand for sweets is very imperious; and parents should understand that the jam pot will diminish the butcher's bill and increase the amount of nutrition extracted from beef and mutton.

CURIOUS IMPORTATIONS.

Butcher Birds.—Many years ago, when rice was dear in Eastern China, efforts were made to bring it from Luzon, where it was abundant. At Manilla there was, however, passed a singular law to the effect that no vessel for China should be allowed to load with rice, unless it brought to Manilla a certain number of cages full of the little "butcher birds," well known to ornithologists. The reason for this most eccentric regulation simply was that the rice in Luzon suffered from the locusts, and these locusts were destroyed in great numbers by butcher birds.

Sparrows.—A somewhat similar business is carried on between England and New Zealand. This latter country, at particular seasons, is invaded by armies of caterpillars, which clear off the grain crops as completely as if mowed down by a scythe. With the view of counteracting this plague, a novel importation has been made. Mr. Brodie has shipped 300 sparrows on board the ship *Swordfish*, carefully selected from the hedge-rows in England. Their food alone, he informs us, cost £18. This sparrow question has been a long standing joke in Auckland, but the necessity of farmers having small birds to keep down the grubs is admitted on all sides. There is no security in New Zealand against the invasion of myriads of caterpillars, which devastate the crops. *Toads.*—The most singular branch of such traffic is the toad-trade. On some of the market gardens near London, as many as five crops are raised in one year, the principal object being, however, to raise the finest possible specimens for high prices. Under such a system of culture, slugs, and other insects are very formidable foes, and to destroy them, toads have been found so useful as to be purchased at high prices. As much as a dollar and a half per dozen is given for full-grown lively toads, which are generally imported from France, where they have also been in use for a long time in an insectivorous way.

Great Ages of Trees.—There is "a glory in trees" as they lift their tall branches on high, giving shelter to the merry squirrel or the singing bird in summer; or when forming Eolian lyres in winter as the winds sing in their leafless boughs. There are many trees which have become sacred by the endearing associations of family scenes. Generation after generation connected with the old homestead have sported beneath them in infancy, and reclined in their shadow in old age. That exquisite ballad, "Woodman, spare that tree!" is brimful of poetry because it is full of truth and vibrates on the tendrils of every heart.

Some trees attain to a great age. In a recent lecture on geology by Mr. Denton—delivered in Montreal, C. E., and reported in the *Gazette* of that city—he said there was a tree cut down in California 96 feet in circumference. He had counted on a block of it, shown in Wisconsin, 13 rings of annual growth to an inch! Here then was a tree 2,496 years old—a tree that was a sapling when Nebuchadnezzer was a boy—that was nearly 200 years old when Socrates was born. A yew at Forthingall, in Scotland, was calculated to be 2,600 years old, and one in Kent, 3,000. There was a tree in Senegal in which an incission was made and the concentric rings counted, from which it was calculated to be 5,150 years old.

Health—Our Feet.—Women are not more hardy than men. They walk on the same damp, cold earth. Their shoes must be as thick and warm. Calf or kip skin is best for the cold seasons. The sole should be half an inch thick; in addition there should be a quarter of an inch of rubber. The rubber sole I have used for years; I would not part with it for a thousand dollars. It keeps out the damp, prevents slipping, and wears five times as long as leather of the same cost. For women's boots it is invaluable. But rubber shoes should be discarded. They retain the perspiration, make the feet tender, and give susceptibility to cold. Stand on one foot, and mark around the outspread toes. Have your soles exactly the same width. Your corns will leave you. The narrow sole is the cause of most of our corns. A careful study of the anatomy of the foot and the influence of a narrow sole will satisfy every inquirer. The heel should be broad and long.

Wear thick woolen stockings. Change them every day.

Before retiring, dip the feet in cold water. Rub them hard. Hold the bottoms at the fire till they burn.—[*Dr. Lewis.*

Cooking Poultry.—It should be cooked just done. To do this, some parts must be more exposed to the heat than others—the thigh for instance. If the thinnest parts, which are the most delicate, are done soonest, they begin to dry—and we all know what dry meat is—it is as near to bass-wood as can be. This can only be avoided by exposing the thickest parts most to the fire. The operation requires some skill. A great point is—to have a clear heat. Dry wood, split fine, is best, as it has no smoke. In a stove, charcoal is equally good. Have a uniform heat, the younger and smaller the fowl, the stronger let your heat be. For large fowl, the heat must have time to penetrate; and all must cook alike, and at the same time. A hot fire will soon scorch the outside, and leave the inside uncooked. Time, and steady, moderate heat will remedy this.

Editor's Table.

Thanks to our Friends.

We should not do justice to our feelings if we did not return our sincere thanks to our friends for the increased patronage we have received through their efforts. We have never had such an accession of new subscribers since we have been proprietor of this journal as we are now receiving. We feared that the enormous price for paper and our very low club rates would cause us to lose many thousand dollars this year. Our profit over the mere cost of paper, for each subscriber, is a mere trifle, and to pay other expenses such as setting type, press work, folding and binding, rent of office, &c., we must have many thousand subscribers, or the profits will not be sufficient to defray all these other expenses. Our readers will see, therefore, how important it is to have a very large subscription list to save us from actual loss. Unlike other papers we have not increased our rates of subscription, when the cost of paper has raised more than one hundred per cent. On these grounds may we not ask one and all to procure us one more subscriber. Such an addition to our list would save us from loss. We are very thankful for what has been done—but we ask our magnanimous readers for one favor more—and that is to send us at least one more name, and as many more as they can without too much inconvenience procure.

The Mo. State Horticultural Society.

The proceedings of this Society will be ready about the 7th of March for distribution among the members, the number of copies for each to be in proportion to the amount subscribed for their publication. They are printed in first-rate style, and make a very valuable work. We had a number of distinguished horticulturists from a distance, whose remarks and essays add great value to the discussions. There are about sixty or more pages of reading matter, in type much smaller than that in the body of the "Valley Farmer." Not having space to publish these proceeding in the "Valley Farmer" without crowding upon our other departments, we have issued a few hundred extra copies at our own expense, and will furnish them to our readers at cost price, twenty-five cents. Some of the Essays alone are worth this sum. To every fruit grower the pamphlet is worth several dollars. All the fruits are taken up and discussed, and lists adopted of the best varieties. The best modes of culture are pointed out, and a vast amount of valuable pomological information given. By enclosing twenty-five cents in a letter to either the Editor or Publisher of this journal, the pamphlet will be sent postage pre-paid.

A FINE MORGAN STALLION.—On a late visit to our friend, Dr. W. W. Henderson, of Bridgeton, Mo., whose fine herd of Devon cattle we have before noticed, we saw a beautiful young Morgan Stallion, which he had recently purchased from the estate of of Chas. Semple, Esq., deceased. He is a complete image of Morgan Hunter, his sire, one of the best Morgan horses we have had in the West. His dam was an excellent Morgan mare, which Mr. Semple purchased at the East at a high price, and brought West. He is a very stylish young stallion, with plenty of bone, muscle and body for a horse of his size. Breeders of fine horses would do well to call upon Dr. Henderson and see him.

MANCHESTER BLACK HAWK.—We are pleased to learn that this stallion will be at the stables of Thos. T. January, Esq., the ensuing season. Mr. January's farm is about twelve miles from St. Louis, and he has an abundance of fine pasturage to accommodate those at a distance. We believe Manchester Black Hawk to be the best representative of the true Black Hawk breed of horses in the West. His sire is old Black Hawk himself, from which this strain of Morgan horses sprung. He inherits the qualities of his sire, has remarkable speed and power as a trotter, great spirit and endurance, and in fine, possesses all the qualities for which the best horses are remarkable. His color is coal black. He is perfectly sound—free from any blemish whatever. The Emperor of France has purchased a number of his descendants, or horses nearly related to him, on account of their fine style, great spirit, and remarkable speed. Those wishing to correspond with Mr. January can do so by addressing him at Florisant, Mo.

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ST. LOUIS NURSERY DEPOT.

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Having leased a commodious store room on Third street, opposite the Post Office, for the sale of my FRUIT TREES, GRAPE VINES, EVERGREENS, &c., I shall be pleased to see my old customers, and as many new ones as may call.

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I invite those wishing to purchase to call and examine the quality of the trees and plants I have for sale. NORMAN J. COLMAN.

HENS LAYING.—Ed. of the VALLEY FARMER: I find in the February number of the "Valley Farmer" an article on the Treatment of Hens, or A Point about a Hen-House, which I think is good, and while the writer had his hand in, I wish he had told us what to do with the hens that want to set, while we want them to lay. This is one of the draw-backs in the hen business. How often do we find a hen after laying from six to ten eggs, begin to set; and, with all the cures that has come to my knowledge, it will take from five to ten days to break her of setting. If any remedy is known, will you be so kind as to give it to us in your next number; by doing so you will confer a favor on many. NATHAN JOHNSON,

Alton, Ill., Feb. 10, 1863.

[REPLY.—We know of no preventive. Our practice is to have a large coop or cage, and when a hen wants to set, and we don't want to have her, we put her in the cage and keep her there for a week. We have the coop supplied with water and food, and she commences laying as soon as she gets her liberty. Does any one know of a better method of breaking hens from setting.]

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HUSMANN & MANWARING, Proprietors.

HERMANN, MO.

Having much increased our business, we take pleasure in calling the attention of our friends, and the public generally, to our large and complete assortment of Fruit and Ornamental Trees and Shrubs, comprising the choicest varieties of

Apples, Pears, standard and dwarf; Cherries, standard and dwarf; Peaches, Plums, Apricots, Almonds, Quinces, Grapes, Currants, Gooseberries, Raspberries, Strawberries, Blackberries, Shade and Ornamental Trees and Shrubs, Evergreens, Vines, and Creepers, Roses, Dahlias, and other plants, Scions of Fruit Trees, Cuttings and Seedlings of Ornamental Trees, Shrubs, &c.

Most of the varieties were tested here and have proved successful in our soil and climate, and all are warranted true to name.

We would call the special attention of Grape Growers to our large assortment of native hardy grapes, comprising over sixty of the choicest varieties, which we have spared no pains nor cost to procure from the most reliable sources. Many of them have been tested here, and all will be tested in the open vineyard, and we shall recommend none until we have found them successful. This we may now confidently do with Norton's Virginia, Herbemont, Missouri and Concord, they having been tested beyond a doubt.

Descriptive Catalogues sent gratis to all applicants. Orders directed to us personally, or to our local agents, will be promptly and carefully filled.

HUSMANN & MANWARING.

Hermann, Sept. 1859-tf.

AGENTS WANTED.

WE wish a number of good reliable men to sell Fruit and Ornamental Trees, Shrubs, Green House, and Bedding Out Plants, &c. from our Nurseries. Will also furnish Tree dealers at low wholesale rates. Send and get Catalogue and price list. LENK & Co.

febtf) Humboldt Nurseries, Toledo, O.

SILVER MAPLES.—A fine lot of three year old Maples for sale, by the 100 or 1000. A fast growing tree for shade or wind-breaks, to be had at the Woodburn Nursery, Woodburn, Ill. J. HUGGINS.

[3tjan]

FOR SALE.

50,000 SELECTED Apple Stocks, @$3 per 1000.

LENK & Co., Humboldt Nurseries, Toledo, O. (febtf

DEVON STOCK.

Stock raisers and others, in want of Devon Stock can be supplied with a limited number at moderate prices, by calling on the undersigned, 12 miles from St. Louis, on the St. Charles Plank Road.

WM. W. HENDERSON,

Or address the Subscriber at Bridgeton, Mo. [tf

BEES! BEES! BEES!—Having a large stock, I offer for sale a few Swarms of Bees in good hives, at $5 a swarm. J. HUGGINS,

3tjan) Woodburn, Macoupin Co. Ill.

GARDEN SEEDS.—The attention of Farmers, Gardeners and Dealers is invited to my complete assortment of choice and reliable Garden, Field, Tree and Bird seeds. Catalogues furnished on application.

Also, Farm and Garden Implements and Fertilizers of every variety. Plants, Trees, Roots, &c.

For sale at low prices. JOHN VANDERBILT.

feb2t) 23 Fulton St. New York.

AUGUSTA NURSERIES.

Near AUGUSTA, St. Charles Co. Mo.

C. TH. MALLINCKRODT,

PROPRIETOR.

I am prepared to furnish a superior article of

Apple Trees,

Peach Trees, Apricots,

Pear Trees, Plum Trees,

Cherries, Quinces,

Grapes, Raspberries,

Blackberries, Gooseberries, &c.

Send for a Price List and Catalogue.

Address,

C. TH. MALLINCKRODT,

1t Augusta, Mo.

COTTON SEED & GINS.

SELECTED UPLAND COTTON SEED. For sale in any quantity.

HAND COTTON GINS. From seven to twenty saws. Furnished to order.

POWER COTTON GINS. From twenty to one hundred saws. Furnished to order.

LEVER AND R. R. POWERS. Suitable for running above. For sale by

Feb. 1, 1863. **PLANT & BROTHER.**

[2tfeb] St. Louis, Mo.